

Under-21s fare badly at OU

by Peter David

New evidence that students under 21 perform badly at the Open University has led to a warning from the vice-chancellor, Lord Perry, that colleges should not regard the OU as a means of alternative to traditional universities.

A report published today on five years of research into a group of under 21s given special permission to take OU courses discloses that they did less well than full-time students in residential universities and older OU students.

Commenting on the results of the project Lord Perry said: "The experiment was vitally necessary for it is all too easy, for political or economic reasons, to see the Open University as a potential substitute for the more expensive traditional university education of school leavers."

It was necessary to prove that what works well for mature students is not necessarily suitable for younger people, whether qualified for university or not."

The pilot project to admit under 21s attracted 1,400 students in three years from 1974. Few were 18 years old and even fewer were school-leavers. More than half were 20 and two out of three did not possess traditional degree course entry requirements.

The younger students were less likely to confirm their registration than older students—61 per cent compared with 75 per cent—or to complete a first year course—63 per cent compared with 81 per cent.

The report says: "Broad comparisons would suggest that the wastage rate among younger Open University students was much greater than those found in other sectors of higher education. Their performance was particularly poor in comparison with full-time students elsewhere."

However, while a relatively small proportion of the younger students are likely to graduate from the Open University, four out of 10 of all those admitted gained some course credit and many had used this qualification to gain entry to a full-time degree course."

The project, intended to find out how suitable the Open University was for younger students, discovered several reasons for their poor performance. These included the fact that most under 21s were entering an unstable period of their lives, as well as being unwilling to "play the system" and take short cuts which would make their studies less daunting.

Professor Naomi McIntosh, the project director, commented: "We can draw out three clear policy pointers from our study. Firstly, there are some younger students for whom distance teaching is the only route to a degree. Secondly, we would expect younger people to do better in a distance system which was specifically designed for them."

Finally, we feel that combining face-to-face distance teaching is an approach that needs more exploring. Only a few people have so far shown looking seriously at this. For example, there have been suggestions recently about an Open University research in another form of evidence suggesting the idea should be explored further."

Clerical staff turn down 11 per cent

University clerical and secretarial workers have rejected a pay offer of 10 per cent.

The union lodged a claim for 20 per cent, plus a 35-hour week in January, and a 35-hour week in January, and the findings of the Clegg study of 1979 salaries.

Union officials are not expecting the report to be published until October, and made a flat rate percentage claim to bring the comparisons which might otherwise arise.

In the public sector, union negotiators are expecting an offer of 12 per cent for local government while colleges, universities and independent schools are expected to offer 10 per cent, had demanded 20 per cent from July 1.

Finniston report 'in danger of prostitution' conference told

by Patricia Santinelli

The Finniston inquiry which had provided a great opportunity for re-examining the education and training of engineers is well on the way to being prostituted, the Association for Sandwich Education and Training (ASET) conference at Brunel University heard last week.

Speaking on the integration of education, training and work, Mr Bill Rae, technical services director for EMI Electronics Ltd, said that the better use of engineers was a laudable aim but it must be tackled directly and logically.

"When the inevitable political gestures have been made those who know and care must overcome the obsession with irrelevant trivia and get back to a competent professional engineering-type attack on the real problems," he said.

He added that useful education and training which must be completed in the undergraduate phase, otherwise it would lead to careers

delay and handicap by having to be included in the postgraduate stage.

The conference also heard from Mr Alan Daniels, chairman of ASET, the first results of a major inquiry carried out among the nine technological universities and 31 polytechnics, which identifies the different disciplines. The research, which was funded by the Manpower Services Commission, gives a month by month account of the number of students on placements and offers the first real opportunity of even out the demand which currently peaks in the summer.

Mr Daniels, who is also director of the Industrial Training Unit of Brunel University said that the next stage would be an industrial survey as well as a survey of the colleges. When this was completed there would be a total picture of the demands and needs on either side culminating in a registry available to both institutions and industry.

Speaking on another aspect of

education, training and work, that of the 16-19 age group, Mrs Marie Patterson of the TUC said that the proposed vocational traineeships as outlined in the Government's consultative document *A Better Start in Working Life* together with the Youth Opportunities Programme and new pre-employment courses in sixth forms would transform the life of all young people.

"The TUC has asked the Government to put forward a target one third of working workers in training by 1983, the cost to be shared between industry and the state with a collective fund for all initial training," she said.

She added that priorities in post-school education should be given to basic education skills such as literacy and numeracy. In addition, trained union education needed to be higher education broadened to give improved access with the development of more part-time courses and opportunities for building up credits.

Ministers urged to seek fee levels

Commonwealth education ministers urged this week to reach an international agreement on higher education to establish levels of access and tuition charges for member countries.

In the first published statement to the ministers' conference in August, the Council for Education in the Commonwealth proposed higher education fees for the commonwealth students to the levels applied by governments to their own students, up to an agreed maximum.

The CEC urges ministers to consider these proposals on the basis of expanding reciprocal arrangements already in existence. All previous Commonwealth Education Conferences have based their discussions on the assumption of reasonable accessibility of higher education in all the developed member states, and in particular Britain, the council points out.

It also draws attention to the emphasis on the new, full cost fee in Britain allowed to students from EEC countries, and to cuts in the British aid programme resulting in fewer sponsored students in future years.

The conference, which is being held in Colombo, Sri Lanka, will have a session devoted to discussion of student mobility, as well as including wider debates on education. Mr Mark Carlisle, Secretary of State for Education, who is to lead the British delegation, is expected to face considerable criticism over his new fee policy.

Lady Pickthorn, the council's Commonwealth and Parliamentary Liaison Officer, said the conference could see the beginning of a more positive approach to the question of overseas students. "People are beginning to realize that this is a matter which affects virtually the whole of the next generation," she told the council's annual general meeting.

All systems go for radiation source

by Robin McKie
Science Correspondent

Britain's first synchrotron radiation source is expected to start its commissioning trials next week when the first bunches of electrons will be fired round the 100 ft diameter of the £5.4m machine at the Science Research Council laboratory in Daresbury.

The machine, which will accelerate electrons to energies of two billion electron volts (2 GeV), will produce synchrotron radiation in intense, continuous beams, providing ultra-violet and X-ray radiation for a variety of different scientific investigations.

Physicists will be able to probe the structure of molecules, biologists will be able to investigate the make-up of proteins, and chemists will use the radiation to study surface effects and crystal structures when the instrument is completely ready for experiments in November.

Synchrotron radiation was originally considered an unwelcome by-product of earlier electron accelerators and is produced at a tangent to the accelerated round in circles.

However, scientists have recently appreciated that the radiation produces more intense beams over a larger and more continuous part of the spectrum than other X-ray and ultra-violet sources.

At Daresbury's NINA accelerator, which was built in the 1970s, the SRC decided to use the site and some of its machinery to build the synchrotron radiation source.

The machine will accelerate electrons, injected into the machine at about 2 GeV and the resulting radiation will be tapped through a series of beam lines running at tangents to the accelerator ring.



A technician works on the installation of a radio frequency cavity, part of the main ring of the synchrotron radiation source.

Along these beam lines a variety of different experiments will be set up by United Kingdom university groups and some international scientific organisations. For instance, a new technique known as extended X-ray absorption fine structure (EXAFS) will allow scientists to investigate the structures of complex molecules such as haemoglobin and study catalytic processes which have particular value for industry.

Indeed, the facilities have proved to be very popular among researchers and the source is already oversubscribed with 200-300 potential users already having expressed interest in it.

However, SRC funding cutbacks have forced the council to reduce development of experiments for the machine, and it is expected that only about half the previously planned number will be ready for use by 1984.

By then, several other countries, including the United States and Japan, will have developed their own sources and it remains to be seen how well British scientists will be able to compete with them with only partially fulfilled experimental packages.

Getting in on the grant act

Students taking drama courses at schools which are not accredited in a list drawn up this week by the National Council for Drama Training will find it more difficult to attract discretionary grants.

The council, set up in 1976 after a Guildenbury inquiry into professional training for drama, has issued a list of 11 drama schools in the first list of accredited institutions.

But another 10 schools, including the prominent Guildenbury School of Music and Drama in London, have not been accredited because they were not able to provide a "structured" curriculum to those seeking a career in the theatre.

The first priority of the council, set up after the publication of the Guildenbury report *Guidelines for the Stage* in 1976, has always been to accredit certain acting courses.

This, the council felt, would raise the standard of drama training between the professional and the amateur, and the training sector, give local education authorities some guidelines in awarding discretionary student grants, and make it easier to move from education to an accredited course to work in the theatre.

Date set for ACAS session

The college lecturers' 1980 pay claim arbitration hearing is to take place on July 9, the Advisory, Conciliation and Arbitration Service confirmed this week.

It will be headed by Sir John Wood, professor of law at Sheffield University and chairman of the General Arbitration Committee. The other members of the tribunal are Mr Michael Barr, director of personnel at the BBC, and Mr George Doughty, former general secretary of TASS, a member of the CAC and chairman of the electrical engineers' union.

In 1971 Sir John chaired the hearing into the pay claims of the college lecturers' pay to arbitration, after the management reduced their 13 per cent offer to 9.2 per cent. The Clegg report, the error in the 13 per cent offer, was corrected in an excess of 20 per cent.

The hearing is expected to be completed on July 9, and unless there is a written finding, it will be decided within three weeks. These would then be considered by the Burmah committee, and unless glaring errors are uncovered, it must be implemented.

Miss Beresford's farewell plea for the mature student

More considered educational provision for the mature student must become both a local and national obligation, Miss Rosemary Beresford, former principal of the Webb College of Education, said this week in her parting speech.

The NUT has been offered two seats on the committee, which is to deal with broader questions of the curriculum as well as teacher supply. It has already had a request for more seats turned down by Mr Mark Carlisle, Secretary of State for Education on the grounds that there was no need for teacher unions to be proportionately represented and that there were already 11 teachers on the committee.

However, the NUT says that its threat is serious and that the offer of two seats is quite inadequate because the union represents the majority of the teaching profession.

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NELP cancels warning

by David Jobbins

A warning to potential students that North East London Polytechnic's applied economics BSc course might not run next year has been withdrawn.

A letter sent on the instructions of director Dr George Brossan, warning of the threat to the course in a multi-million pound rationalization scheme has been superseded by a letter from acting director Dr Jim Proctor making clear there will be an intake this autumn.

"Self in the department of applied economics have been told that recruitment can go ahead for 1981," a polytechnic spokesman said.

Dr Brossan was abroad when the decision was made to remove any question mark hanging over the course's immediate future.

While the threat has been lifted from the one department now vulnerable in the major reshuffle designed to equip NELP for the financially tough 1980s, the polytechnic governors made several crucial decisions at a key meeting last week.

These were:

- A withdrawal from the Waltham Forest practice "as soon as practicable" after September 1.
- Breaking up of the environmental studies faculty and reorganization of the polytechnic on a six-faculty structure.
- A move to Department of Education student-staff norms of 10:1 and 12:1 for laboratory and classroom based courses.
- Opening of consultations on 62 academic staff—two from the directorate, 10 from central teaching staff, six from engineering, 11 each from humanities and human science.

Centre closure 'broke poly statutes'

by Paul Flather

A professor at Ulster Polytechnic is seeking legal advice to reverse a decision to disband the college's Centre for Management Education because it was carried out "unconstitutionally" and "against the interests of the college."

John Smith, head of the centre until it was disbanded in April, has accused the polytechnic of failing to follow accepted procedure laid down in college statutes and of providing misleading information to committees.

The centre, which this year attracted more than 200 students, has been merged with the faculty of business administration to form a new faculty of business and management. The 21 full-time staff of the centre except for Professor Smith have moved to the new faculty.

Professor Smith said he knew of no benefit to the college by closing the centre. He was seeking legal advice to challenge the decision. The college has denied all charges that it acted wrongly.

The Polytechnic's development committee set up a working-party in January to report on three proposals to disband the centre, and to set up a new management development agency and a new management development advisory group.

The proposals were approved at a meeting in February and the transfer of staff to the merged faculty of business and management

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Press plans criticized

Controversial proposals to close down the Liverpool University Press have been strongly criticized by three senior academics who edit the university's academic journals.

The three, who edit *Third World Planning Review*, the *Bulletin of Hispanic Studies* and *Journal of Planning Literature*, claim that the university press has been badly managed in the past but could be made profitable.

They also criticize the academic needs committee, which has recommended closing the press in September, 1981, for basing its decision on the retirement of the existing secretary.

"Decisions about the future of the press should not be contingent on such matters, but should be made on the merits of the case."

"Whether the decision is to close the press or to reconstitute it on a better-managed basis, the date of the retirement of the present secretary is an immaterial consideration."

In their memorandum the three editors argue that the financial predicament of the press results from poor management and over-optimistic forecasting of publication and sales revenues.

They also believe that a narrow view of the press as publisher of well-produced books of minority interest has prevented it from exploiting bigger markets through paperback publishing and the publishing of basic texts.

The memorandum calls on the academic needs committee to examine the possibility of reorganizing the press to achieve wider financial objectives, set within the context of the university's overall budget of over £20m, and related to a wider interpretation of the press's objectives, would meet the university's academic needs in a far more appropriate way than this university subsidizing other publishers."

NUT maintains boycott threat

The future of ACSET, the newly reconstituted Advisory Committee on the Supply and Education of Teachers, is hanging in the balance under the threat of a boycott from the National Union of Teachers unless it is granted greater representation.

The NUT has been offered two seats on the committee, which is to deal with broader questions of the curriculum as well as teacher supply. It has already had a request for more seats turned down by Mr Mark Carlisle, Secretary of State for Education on the grounds that there was no need for teacher unions to be proportionately represented and that there were already 11 teachers on the committee.

However, the NUT says that its threat is serious and that the offer of two seats is quite inadequate because the union represents the majority of the teaching profession.

Warning over access courses

Expanding special courses for minority groups while other courses were being cut could provide students with a false impression of the quality of education, warned this week.

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Student union in pay deal dispute

The student union at a London polytechnic is on the verge of a dispute with Nalco over its refusal to pay nationally agreed salary rates.

The student union at the Polytechnic of Central London is refusing to pay March and backdated nationally following a report by the Clegg commission, until the job descriptions of its six employees are reviewed.

The Clegg award ranged between 10 and 15 per cent and Nalco officials say that the only people not to have received it.



Nikolai Pevsner, the art historian, is one of the portrait subjects in a travelling exhibition entitled 'Elders', which is on loan from Southampton University's John Hansard Gallery. The exhibition is part of a touring photographic service run by the Gallery. Details of the exhibitions available can be obtained from Mr Leo Stable, John Hansard Gallery, The University, Southampton SO9 5NH.

Councils open door to college principals in new talks move

by John O'Leary

College principals are to be invited to attend meetings of the new national body set up by the local authorities, whether or not their authorities are polytechnic, in the public sector of higher education.

The Council of Local Education Authorities' Further Education Group has decided to put off moves to encourage joint representation until after it has met all the relevant bodies. The Committee of Polytechnics has said it will meet the CLLEA group but is unwilling to surrender its traditional place in national discussions on higher education questions.

However, the Standing Conference of Principals and Directors in Colleges and Institutes of Higher Education, which has protested at its exclusion from national talks on funding and other issues, has been assured of equal treatment with the CDP. The first session with the CLLEA group will take place in September, 1981, for basing its decision on the retirement of the existing secretary.

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It is most unfortunate that details of the procedure and other items of information were not clearly explained to local authorities. In view of the paramount importance of the careful and accurate preparation of claims, the Standing Conference should give a great deal of attention to the formulation of adequate guideline documents and appropriate claims forms in future.

The Standing Conference will make renewed efforts to achieve representation on the body which makes recommendations for a permanent new allocations system. It is waiting to see whether this task falls to the existing Department of Education and Science study group chaired by Mr Stephen Jones, a DES assistant secretary, before making further moves.

In the meantime, the principal's style may become less aggressive following a series of meetings which have reassured them on the question of representation. They have met Dr Rhindes Boysen, Under-Secretary for Higher Education, and the Society of Education Officers.

Mr Neil Merritt, chairman of the Standing Conference, said this week: "There has been a reasonable response by those parties with whom we have had discussions, although there is a lot of ground still to be covered. We hope that the success of the Standing Conference is better understood than our aspiration is to work in harmony with the CDP and others to secure the best arrangements for maintaining higher education."

"We do not seek confrontation but cooperation and understanding"

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Chilver recommends single site

by Paul McGill

The Higher Education Review Group has recommended that all teacher education in Belfast should move to the site now occupied by the state-owned Stranmillis College. A new Belfast centre for teacher education would incorporate Stranmillis, the Roman Catholic colleges of St Mary's and St Joseph's and the teacher education role of Queen's University.

The committee, which was chaired by Sir Henry Chilver, vice-chancellor of the Cranfield Institute of Technology, said this week that the small Catholic colleges should merge but the other institutions involved should continue to enjoy separate legal and administrative identities. In particular, the special denominational ethos of the voluntary colleges should be preserved.

No firm proposals are made for the new centre, but three options are suggested—entirely autonomous colleges with some sharing of staff in shared areas; a federation with more formal cooperation or a structure in which Queen's would undertake all academic subject teaching and the colleges would provide professional education courses only.

The committee's interim report says the main features of the centre should be a large degree of cooperation on all academic matters, continued safeguards for the distinctive ethos of each college,

separate staffing of each college in areas where they can be self-sufficient, mutual reinforcement where they cannot be self-sufficient and a mixing of students socially and academically.

In the rest of Northern Ireland the verdict of the review group is that things should continue as they are, except at a lower level. It praises the work of both the Ulster Polytechnic and the New University of Ulster, and argues that they can tolerate lower intakes because they can draw on the resources of other faculties to keep teacher education courses viable.

In the case of NUU, however, there are two provisos. The first is that if intakes have to be sharply pruned again, teacher education in the north-west may have to be sacrificed in order to ensure the viability of provision in Belfast.

The other is that the retention of teacher education in the area is dependent on the continued existence of a general higher education institute, and an indication that the future of the Coleraine university is still in doubt, pending the review group's final report next year. Moreover, the report refers to provision in the north-west, not specifically in Coleraine, which switches to another centre like Londonderry.

The report argues strongly that the three Belfast colleges cannot hope to remain viable. Their combined enrolment has already fallen from 2,281 in 1975-76 to 1,550 this

year and intakes are due to fall next September to only 305 from a peak of 878 in 1973-74.

The group suggests that Stranmillis could be down to about 415 students and says it would not be realistic to believe it could be reduced to a level sufficient to offer the necessary range of 17 academic and five professional subjects.

Even if the college had about 25 more lecturers than it was entitled to—at a cost of about £225,000 a year—the classes involved would be too small to allow students the stimulus they need. The case is even stronger with St Mary's and St Joseph's, but even if they merged, the problem of viability would remain, the report says.

Similarly it rejects the possibility of a split site arrangement on the grounds that it would cause problems of coordination, involve wasteful travelling, present a permanent disincentive to the sharing of academic and physical resources, contribute to a sense of isolation and cost significantly more than a single site.

More positively, the report supports the breaking down of monolithic isolation and claims that students will benefit in the general education from mixing socially and academically with their contemporaries in the rest of higher education.

Similarly, it comes out clearly in favour of some degree of religious integration. Teachers who will work in largely segregated schools ought to have experience of a wider social environment than that open to their pupils.

● The sad mathematics of integration, page 8.

Tories claim university funding levels are 'fair'

by David Jobbins

The universities have done "extremely well" out of the 1980-81 recurrent grant allocation, Mr Mark Carlisle, Secretary of State for Education, said at the weekend.

"Most of them accept it," he told a meeting of the Conservative National Advisory Committee on Education in London.

"We have put back in what they had lost the previous year, and I think they agree they have had a fair deal."

Entrants would remain "much at the same level" for 1980-81 as last year, he said.

On overseas students, where the main saving was being made, he believed numbers would stand up much more than critics had suggested.

The Government was looking for ways of increasing numbers in non-advanced further education without having to spend more, Mr Carlisle said.

"We are looking for greater rationalisation of advanced further education by firmer use of course approvals," he added. A major re-look of education opportunities for the 16-19 age group was in hand.

Mr Carlisle denounced as "crazy" Labour plans to make schools pay full cost fees at university.

Neil Kinnock says that if you live in Britain, pay British rates and taxes, but send your son to an independent school, then you should not be allowed to benefit from free university education.

"But if you live abroad, no matter what type of school he attended, so the societies are a British university."

Just as every parent had the right to spend his money on his own child's school education, he had every right to avail himself of other forms of further education which his rates and taxes had contributed.

He attacked the suggestion of independent schools' employing teachers with British degrees and pay the cost. "Presumably if a teacher transfers to a state school, his independent school gets its money back," he said.

Why stop at teaching? he asked. If you become a civil servant or work for a nationalised industry, you don't pay—but if you take a job in the private industry, you must pay for your education."

Knocking needles wielded by Tories, Carlisle ended his attack on Labour's "vindictive, vicious, equitable and plain deal" by saying that "kill off the independent schools" was a "slow strangulation."

Personal freedom was under threat from the Tories, he said. "If you live in Britain, pay British rates and taxes, but send your son to an independent school, then you should not be allowed to benefit from free university education."

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Berkeley ballot rejects faculty unionism

North American News

by Clive Cookson

Faculty members at the University of California, Berkeley, have voted against collective bargaining in the first election under the new Higher Education Act.

The faculty association made clear that it was a collective bargaining election where they were not running against the campus administration, which would have a very attractive target.

Furthermore there were no bargaining issues that had been identified at all clearly," he said.

Dr Saxon said the UC administration was still considering what conditions to draw from the Berkeley election. "I was pleased that the vote turned out the way it did. I am concerned that it was so close as it was," he said.

Both Dr Saxon and Mr Heyman said the support for the Berkeley faculty association as an essentially defensive response to the UC campaign for collective bargaining, Berkeley would be left isolated and vulnerable. They recognized, too, the argument that the faculty association would have a stronger voice in Sacramento, the state capital, if it won the bargaining election.

Berkeley Chancellor Albert Bowker welcomed the no vote which, he said, "shows support for the continuation of the traditional relationships at other UC campuses."

After the association's executive board had discussed the narrow defeat, the chairman, law professor

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Paul McGill examines the complex implications of the findings by the Higher Education Review Group

Sad mathematics of teacher integration in Northern Ireland

Even before its publication this week, the interim report of the Higher Education Review Group, chaired by Sir Henry Chilver, had become a major political issue in Northern Ireland. Already the issue of integrated teacher education has been interpreted as an attack on the Roman Catholic minority.

Earlier this month, priests throughout Ulster's largest diocese used their Sunday sermons to alert parents to the coming assault on Catholic education and paralled were drawn with the large schools of the Penal Days. The issue was taken up by West Belfast Catholic MP, Mr Gerry Fitt, who has warned the Government that any effort to close the Catholic Colleges is "asking for trouble" and claimed the only justification was to save money.

In its evidence to Chilver, the Mary's, the Catholic college for women, argued that the student in a Catholic college is "a member of a community of learners, with a distinct life-style based on Catholic culture and the integration of intellectual and religious development." The Church's argument is that this type of formation is needed to ensure the right kind of teacher for Catholic schools. Consequently, any integration with separate Church colleges of education is an intrusion on the right of parents to have their children taught in schools, and by teachers, of their own faith.

For others, the issues are not quite so simple. Segregated schools are a viable without the need for separate teaching and, on the other hand, fragmented training creates serious educational problems, as well as being socially undesirable.

Many of the educational problems now are the same as those considered more than six years ago when teacher education was last reviewed by a committee chaired by Professor Frank Lelievre.

Then, as now, seven different institutions were involved in teacher education: three colleges of education, two universities, a polytechnic and a technical college in Derry taking a small number of

into the latest debate—that separate colleges are simply not viable educationally. Queen's University argued that the largest number of students Stranmillis can hope for once the cuts have worked their way through is 541, including both initial and in-service places.

Similarly, even if St. Mary's and St. Joseph's merge, they could not expect more than 524. With 17 academic subjects and options in education and professional studies, the average size of department is about two. Queen's concludes this would be academically harmful, wasteful and therefore untenable.

Falling enrolments have also transformed the arithmetic of the cost of continuing segregation. At a time when the three colleges have 2,303 students between them, as they did in 1972, the building of a unified college may have seemed prohibitive. However, with only 865 initial training places plus 200 for in-service training (as Queen's predicts) it is quite different, especially since Stranmillis alone used to have more than that. And it would save a huge amount of duplication of buildings, staff and administration.

Another thing has changed since the time of Lelievre. Integrated education, as a desirable thing in itself has become more of an issue. For example, among those supporting it in submission to Chilver are national and local student unions (apart from those in the Catholic colleges), Queen's Stranmillis, the Ulster Teachers' Union, the Association of Polytechnic Teachers, the Northern Ireland Parents' Association, and several of the political parties.

In general it is accepted that safeguards for the Catholic Church must be built into any new arrangements in Northern Ireland and the right to separate denominational instruction. But some are sceptical of the whole argument that students and pupils must be taught in institutions pervaded by the ethos of Catholicism in which Catholic doctrine illuminates the learning.

They ask what are the distinctive characteristics required to teach mathematics, physical education or commerce in a Catholic school. And, if it means the Catholic spirit must permeate the teaching of subjects like history or philosophy, they see this as a very real and in conflict with academic integrity.

More practically, they argue that the Catholic Church is ill-equipped to train Catholic teachers since Catholic schools already recruit teachers from non-Catholic



Top left Sir Henry Chilver, below, Gerry Fitt, and right, Queen's University, Belfast.

colleges like Queen's or NUU. Indeed, small numbers of Stranmillis students, and even Protestants, have been employed in shortage subjects.

Some argue that segregation is contributing to the gulf of ignorance in Northern Ireland and even if it does not actually cause division, it is a symbol of it. The debate over integration seems set to blot out serious discussion of education issues, such as the viability of courses, who should teach them, whether teachers should be trained apart from other students and how to spread teacher education over Northern Ireland without fragmenting it too much.

Actual intakes in Northern Ireland in 1974, planned intakes for 1980, and the decline by college (Excluding Derry Technical College).

College	1974 Intake	1980 Intake	Percentage decline
Stranmillis	465	155	66.7
St. Mary's	205	74	62.9
St. Joseph's	180	78	55.8
NUU	180	115	36.1
Queen's	175	90	48.6
Polytechnic	182	80	56.0
Free Trade	580	580	0.0
Total	1947	580	69.7

History's voluntary exile

John O'Leary on the shape of things to come for higher education

It seemed, only a few months ago, that the "Broad Steer" was going to do for the 1980s what everyone had expected from Model E in the dim and distant days of the Labour government. Namely, to provide a new direction for higher education to enable it to survive an inevitably turbulent decade, neatly encapsulated in the obligatory catchphrase: "A new life".

Although Dr Rhodri Boyson's analogy for the capping of the pool-like Schleswig-Holstein question, he said, it was understood by only three people, one dead, one departed and one disinterested—might have been even more apt for the Broad Steer, it was assumed by many to be the coming trend.

A modified version of manpower planning, it appeared sufficiently in tune with Conservative thinking to form the backbone of higher education policy, once guidelines could be agreed.

The concept of the Broad Steer, which is attributed to Mr Alan Thompson, deputy secretary at the Department of Education and Science, avoided detailed planning for each subject but suggested discussion in the allocation of resources within a predetermined subject areas. It would enable the Government to influence the shape and size of the higher education system without being seen to intervene directly.

Nothing illustrated this point as starkly as the Prince's Select Committee on Education, which dealt with manpower planning. Since this had been one of the topics suggested by Mr Mark Carlisle, secretary of state for education, the committee's inquiry into higher education was announced, the evidence for this session could be seen as among the most significant submitted.

However, the array of experts did little to encourage supporters of the planning approach. The near unanimous verdict was that the requirements of industry could not be measured with sufficient accuracy to dictate places in higher education. It was a far cry from the present position, where a carpenter's last

book at Foyle's bookshop in London where you choose your goods and queue for a cash slip, then queue elsewhere to pay, and then return to the first point and face another queue while waiting to collect them.

As one said: "The nagging thing is that it is not what you are for. I did resent the amount of time it actually takes to live."

Some of the students came back with dismal accounts of Russian organization. Team leaders had to insist time and time again that their grants should be paid on time, and had to fill in endless forms. In some cases students got the bulk of their money a few days before they left, when they had to spend it quickly as roubles cannot be taken out of the country.

The organization of trips within Russia is another sore point. Visitors either took several weeks to organize or were cancelled at the last minute with no apparent reason. Again this was due to blunders by Soviet officials rather than anything deliberate.

Despite the continual frustration of trying to beat the red tape, the students are able to rise above it and find their visits immensely enjoyable and worthwhile, with more than enough friendship, challenge and scenic and cultural highlights to outweigh the disadvantages.

Meanwhile the work trip is being organized by the Olympic Games has already been brought up but fortunately it only figured because the time of their staying might mean a delay in the student party's departure.

Taking the Broad Steer by the horns

John O'Leary on the shape of things to come for higher education



Some attempt to bring education and industry more in line to time, it will be surprising if the committee reaches the conclusion that manpower planning is a practical proposition. Even in its most watered down form, the Broad Steer is unlikely to find favour with all the committee's membership.

Although the Department of Employment's studies are still examining available indicators of demand for graduates, Mr Carlisle has already ruled out detailed intervention. He told the Select Committee: "Precise manpower planning is a state for the long term required by educational planning; but for the same reason broad guidelines on subject priorities within the higher education system would be valuable and need further study."

This view won the support of the Department of Education in its evidence to the committee, in spite of its stated belief that the knowledge and skills necessary for the efficient functioning of industry and the economy were not being produced in sufficient quantity.

"Precise manpower forecasts in terms of numbers and categories for various industries are not a feasible proposition, and are unlikely to produce useful guidelines for detailed educational planning," the DoE submission said. "On the other hand, the general balance of the higher education system which has evolved during the period of rapid expansion following the Robbins report seems to us in the Department of Education to have resulted in an overall balance that is well suited to the needs of industry."

The post-Robbins expansion in arts and social sciences should now give way to an emphasis on engineering and technology graduates, the department said. There was a case

for providing some form of guidance to higher education establishments on the balance of the system.

Not surprisingly, this view was echoed by Sir Monty Finniston, although he too acknowledged the pitfalls of detailed forecasting. By the time a new technology has been established and has been incorporated into the undergraduate teaching programme the chances are that it is already obsolete or becoming so, he told the committee.

The unsolved problem facing those who favour even a mild form of direction in higher education remains the absence of reliable indicators on which to base the policy. The Institute of Manpower Studies emphasized that sufficient resources would have to be made available to enable proper assessments to be made of future manpower needs. This could be done through a national standing committee or forum independent of existing Government departments and with a brief to focus on manpower needs and not on education.

Also, there is disagreement over how long a period forecasters should aim to cover. The Department of Employment study is to concentrate on short-term indicators; but others insist that forecasts need to be made for much longer into the future.

The Institute told the select committee it would take at least five years for the education system to adjust to any information obtained. Specific assessments of future manpower needs are likely to be "highly speculative" or more years ahead and the inevitable impression highlights the need for flexibility both in course provision and in graduates qualifying.

Even if we were able to accurately identify the number of students necessary to assume they would be filled would be a major task and would repeat many of the

problems of the 1960s and 1970s, the institute's submission said, drawing attention to falling participation rates.

Its advice would be to concentrate on ensuring a supply of graduates with sufficient basic skills to provide flexibility in meeting changing manpower needs and an education and training system which operates with employers throughout people's careers and not just when they leave school.

The careers advisory group which submitted evidence for the same session were still less optimistic about the prospects for accurate forecasting, despite the advice of the Graduate Careers Advisory Services that there is an imbalance in the supply of graduates, with a shortage of engineers, physical scientists and numerate graduates.

AGCAS would therefore submit that it is important to keep first degree education broadly, if more scientifically, based and that, in order that the investment in it can be most effectively utilized, proper provision is made for postgraduate vocational training, the association said in its conclusion.

Likewise, the university and polytechnic careers services dismissed anything but short-term adjustment to meet immediate needs.

Lancaster University, pointed out to the committee perhaps the most telling verdict was delivered in 1975 when Lord Crowthurst, the current Broad Steer, then known as the Broad Brush, was under discussion. Then Professor Mark Blaug, of the London University Institute of Education, wrote: "We may expect to see the idea revived every five or 10 years, whatever the research and whatever the practical lessons of the past. In short, we can confidently look forward to another Crowthurst-Hunt in 1980."

For unfair dismissals hearings was lowered—and to the number of authorities who cut the hours of their part-timers to ensure they are still employed.

This impasse comes when part-timers find themselves increasingly vulnerable in the climate of government-inspired cuts.

A significant proportion work in non-vocational areas—although it is only fair to say that substantial numbers of lecturers in vocationally-oriented departments, such as architecture find part-time lecturing convenient.

Many authorities are about to embark on the annual review of part-time contracts, and officials are expecting that many hitherto-regular contracts will not be renewed. The combined effect of the cuts and the possible move to pre-arrange payments for many part-timers may have a serious effect by this autumn, they warn.

Inner London is one region heavily dependent on part-time lecturers. Already there is concern that up to 30 lecturers at some of the city's art colleges may be told they are no longer needed. In the North-West, at Kingston Polytechnic, art colleges are finding themselves in the front line of cuts.

There are going to be a lot of redundancies, a major problem facing Naffie is that many part-timers are not members, and in specially vulnerable areas grass root recruiting drives are being initiated.

A stark fact is the tendency among Naffie members with full-time jobs to regard part-timers as "cut fodder", who can be taken on by a local authority and then discarded when the need or the cash has gone.

David Jobbins

Ngaio Creguer looks at the problems which certain teachers face in arranging exchange schemes

Tripping over the red tape on the road to Moscow

The lecturer in Russian had just discovered that Cooks, the travel agents, had withdrawn all their winter tours to the Soviet Union. There was no way she could get to Russia in mid-November to carry out her planned work.

For those people who assume that the best way to learn a foreign language, or master it for teaching purposes, is to go to the country concerned, they should steer clear of Russian.

Teachers and students of Russian are having to weather a particularly difficult storm at present. The University Grants Committee has confirmed its recommendations for a radical contraction of the subjects in the universities. It even went outside its brief to suggest there was a similar need to cut back in the polytechnics, although those institutions know the market forces have already done a more effective job.

Russian departments are also susceptible to the effect of Soviet political action and resultant Western reaction. The 1968 invasion of Czechoslovakia had a serious dampening effect on student numbers and it would be unrealistic to assume that present events will not also take their toll.

Fewer and fewer schools teach Russian. Lecturers though are incensed to hear their subject described as a minority language which attracts 250 million people in the world speak it. It is the lingua franca of Eastern Europe.

As well as the external forces teachers of Russian must contend with, they also have their own problems closer to home, and that is the lack of hardware, sometimes

exhausting task of getting their students to Russia to further their knowledge.

Last week a group of teachers representing Russian departments met at Hull University to discuss their direct exchange scheme. They came from Gilling and Disbury College, Wolverhampton, Polytechnic, Queen Mary College, London, Leeds, Manchester and Hull universities, and the British Council. Together they are members of the V/2/2 committee, so named after the clause in the Anglo-Soviet cultural agreement which set up the exchange of British and Soviet students.

They sent 32 students from universities and polytechnics to Russia twice a year for a three-month stint in the country, and bring them back to the Anglo-Soviet cultural agreement which set up the exchange of British and Soviet students.

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Guaranteed to be on the top of the agenda for every meeting is the problem of getting visas for the students. On several occasions in the past the visas have not arrived until the last minute, sometimes hours before the party is due to leave.

Last year they did not even arrive in time for that. Costly plane journeys had to be substituted for the more usual train arrangements.

Professor Richard Penco, of Hull University, explained: "The men at the Russian desk was away ill. The bureaucracy is such that if someone is ill, no one takes over his responsibilities. The job waits until he comes back."

The reasons the Russians have given for this in the past are that students have got married or failed their examinations or that mothers and fathers have drawn back at the last minute. This is some hint of the parents' or the administrators' of the effects of international politics.

Professor Penco does not think the Russians are losing interest in the subject. "I think they feel isolated and they are looking for a way to get in touch with the world. They are keen to keep this kind of contact up."

There is considerable variation in the nature and type of exchanges operating between British universities and Russian Europe. Leeds University has direct exchanges with

Higher Education, then to the Institute in Russia and then back to the Ministry. Without a telegram from the Ministry to the Soviet Embassy here no visa can be authorized. Universities cannot deal directly with universities in Russia.

These problems of delay, which the committee has often taken up with the Soviets and which they believe are being reduced are not confined to Anglo-Soviet exchanges. Nevertheless some members of the committee feel that exchanges between Russia and France are less troublesome because of a closer and more traditional cultural bond between those two countries.

Another administrative problem that sometimes arises is that the Russians do not always send their full complement of students, although this may have unplanned financial advantages for the British.

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Bulgaria and Bradford has a long-standing exchange with Leningrad. At Hull, most students taking a degree in Russian will only spend one month in the Soviet Union, plus there are native Russian speakers.

It may sound straightforward, but it is not. A year in Russia should be a mandatory part of the course. But it would mean a specially designed course, possibly with staff to teach English as a foreign language, and the problems are already immense arranging short stay exchanges. Even so some students are able to stay up to ten months at a Soviet university.

A Hull lecturer said: "A student of French can get a ticket at Victoria station and end up at Calais. They can get jobs to support themselves and live with a family, learn the language. But the student of Russian needs a visa and can only go to the places specified on the visa. Nothing can be done on an unofficial or casual basis. So organized exchanges are crucial, and anything that affects them is serious."

Students selected for exchanges need more than academic ability. They require robust personalities, confidence and a strong stomach. "Life is tough, you have to adapt to constant frustrations and hardships. You can wait up to an hour for proper service at a restaurant. There are shortages of fresh meat, vegetables and fruit. You wake up one day to find there is not one egg in all of the shops," he said.

Another lecturer said the only thing he could compare it with was what happens when you want to buy

a book at Foyle's bookshop in London where you choose your goods and queue for a cash slip, then queue elsewhere to pay, and then return to the first point and face another queue while waiting to collect them.

As one said: "The nagging thing is that it is not what you are for. I did resent the amount of time it actually takes to live."

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'Don't have a go at romantic fiction if you know nothing about sex'

For an academic from the Social Sciences there are obvious attractions in being given the opportunity to serve in Government at a senior level. Throughout my total experience of seven years, broken into two spells, serving four different Secretaries of State in two different Departments (Health and Social Security and Environment) I was regarded as a Deputy Secretary. Grading is important. It normally determines what access you have to whom and what papers you have a right to see. But of even more importance is the right of direct access to the Secretary of State. Throughout I was placed in the privileged position of being able to attend any meetings in the Secretary of State's office and to see virtually any papers he saw, usually before he saw them. I thus had the opportunity to have my say at the same time as the civil servants concerned were having theirs.

Historians try to reconstruct why past decisions were taken. Sociologists theorize on the underlying forces in which societies are responding. Political scientists speculate on the nature of power and the process of decision-making. Academic public administrators study the role of officials as advisers and interpreters of policy. Statisticians examine the influence of information on policy. Social policy specialists, such as myself, analyse, among other things, the philosophical assumptions underlying alternative approaches to policy-making. To go through life studying, analysing, speculating, reconstructing, theorizing how rational or less rational decision makers may or may not have behaved, or behaving or will behave without ever seeing the process in action is like reading or writing romantic novels without ever observing, let alone experiencing sexual intercourse.

There is a world of fantasy created by academic writers, perpetuated by academic teachers who in turn become further academic authors which is totally different from the real-world of action? Why a privilege to be a part of the process of decision-making is taken, let alone to be allowed to sit round the table while the decision is taken and even to be able to talk to the man or woman who took it—not just with a tape-recorder years afterwards but over a drink that very evening? Who does not want to see history being made?

What did I learn? That much of the theorizing was too clever by three-quarters. First, some decisions took themselves. Whatever creative thinking one tried to do, there really was a given, the situation, only one answer. Secondly, I learnt that the precise context was often critically important: the historians' approach to the study of decision-making had generally most to commend it. Thirdly, I came to realize that there really were no terms which in the particular circumstances could not be solved. But I also found that there were occasions when the outsider could make a useful contribution by widening the options which were put to Ministers and promoting a solution which was more acceptable. In the process of crystallizing the issue, civil servants could rule out bolder alternatives. Here, the higher levels of the Department are critically important. The personality and judgement of individual civil servants can influence policy. Some are cautious and too keen to protect Ministers from entering controversial ground. Others are bold and determined to find some way of carrying out the Minister's general intentions even though there are risks and awkward issues and it will be difficult to tidy up.

In general civil servants are less adventurous than academic advisers. There is a bias in favour of the status quo. This is not because of political bias. It is because long experience has shown that it is the loose ends of policy which matter to the long run. If there are anomalies, in time they will be exposed. Long after the initiating Minister has moved on to other portfolios or to the opposition, the Department will be left with awkward anomalies which will require an effort to be made. For reasons such as these, a whole Department can gang up against a Minister to persuade him to drop some rash commitment—possibly made

hastily during an election campaign in response to a press cutting or a public opinion poll. But once the Minister has resolutely rejected this advice, the whole Department suddenly can swing into action to find the best way of doing a bad job. More cogent reasons may be found in favour of the course of action than were ever thought of by those who originally proposed it. The total change of direction in the submissions sent to Ministers over the same signatures demonstrates who ultimately has power when power is asserted. Departments can be as supportive in implementing policies they do not like as those they do.

The good books on public administration had taught me that the key civil servants are generalists. I was a specialist in social policy with a special concentration on health and social security. This led me to assume that I necessarily had a more detailed knowledge of the subject-matter to be decided than those who normally advised Ministers. Nothing could be further from the truth. I had never appreciated the abundance of information available to Government on any question upon which policies were regularly made, reviewed and occasionally changed. There were three principals, each illustrated by a subject area. At the top were the three principals, virtually all the factual material needed to write a PhD on the recent development of the policy in question. Not only had they the parliamentary debates, the white papers, the green papers, the discussion documents and the parliamentary questions and their answers (including the draft answers to those more damaging supplementary questions which were never asked) but the academic articles, the press cuttings, the memoranda from interest groups and pressure groups, the correspondence with Members of Parliament and the public attempting to defend those awkward borderlines of policy where apparently the Government's real injustice is inevitably to be found.

Even if the principal had been newly assigned to the task he always had stalwart HEOs who knew their way around the files and could



find the relevant documents indicating the basis upon which current policy had been made. Not infrequently they could also explain the reason why the bold new initiative which was currently attracting the new Minister had been killed. And for good reason: Government is the training of the civil servant, his function is more specialist and his information base more complete than any academic working from purely theoretical material, provided the question is of one established interest to Government.

This qualification is important because it is often in those very areas in which Government has not previously been creatively involved that new policy initiatives are taken. Deprived of his files, the academic civil servant is often at a disadvantage compared with the academic who has had to teach and therefore read over a wide area. He has a range of experience and a search for questions and answers which have ordered things differently. What the outside academic brings to Government is not depth of knowledge but breadth of knowledge. What he also brings is a larger

In our continuing series on academics in Government, Brian Abel-Smith remembers doing as much learning as advising during his time with politicians

historical perspective. He has had to teach about the past as well as about the present. He has had more time to read about it than the civil servant who has had to concentrate his mind on one narrow range of problems followed by another narrow range of problems.

The specialization of function within government departments and between government departments inevitably makes it extremely difficult for any government to operate with a wholly consistent philosophy. For example the Secretary of State for Social Services has a duty to provide services to improve health but the action or inaction of departments other than his dealing with environment, housing, labour, advertising, agriculture, consumer protection, transport, tax, etc. may well have a greater impact on health than anything directly under his control. The Secretary of State for Social Services has a major interest in questions of poverty but his policies can be frustrated by those of a whole range of other departments. Where a common or potentially conflicting interest is identified, special arrangements can be made between government departments to work on inter-related policies and produce consistent policy options but possible inconsistencies may not always be taken. The problem is to get early warning of what is being done while the broad ranging academic policy adviser without any administrative responsibility can reinforce the efforts of senior civil servants to coordinate policy. Their time is inevitably restricted by these heavy responsibilities.

But inconsistency of policy is to some extent inevitable. All governments have conflicting objectives. These are built into the priorities of different government departments and, even within different divisions of the same department, inevitably greater emphasis will be given to one objective at one time and to a different opposing objective at another. Nor is this confined to the obvious clash of public expenditure. What is seen to be the overriding requirements of economic policy can distort or undermine previously articulated policies in a whole variety of different ways. The adviser can warn his Minister that the policy is warms available to be quoted back at him. If policy lurches in a different direction. The essential role of a Cabinet is to adjust the balance between competing interests.

Each Department has its own style. But no less important is the relationship between the Department and the hard end of the operation when its activities impact on the public. Social security is run by a straight line of command from the Permanent Secretary to the clerk in the local office. A realistic appraisal of the difficulties of implementation is therefore available before decisions are taken. In health and housing on the other hand, the health authorities and the local authorities, who implement the policy are not in the same hierarchical relationship to those who make it or try to make it. It is therefore much more difficult to be sure what decision will have at the local level. It is all or applied in the way that it is applied. Rarely have civil servants actually worked at the local level. In health and housing what they do not know is the academic who has studied the hard end of a service or better still worked in it and is aware of the literature on it and the range of forces at work from the

users' point of view can bring a valuable scepticism and criticism to some of the more extreme suggestions of policy initiatives which can go on in the stratosphere of a central department. In some government departments the policy planners are the detached academics while the academic from the outside finds himself playing the role of the realist.

An academic should have learnt to communicate with his students. He has also probably learnt to write for the general public as well as for fellow academics. In both roles he has had to try and find a way of being precise, concise and accurate to get his message across. Most of the writing done by civil servants is for the reading of other civil servants. Even more than most academics they tend to develop an in-group language in which style is unhesitatingly sacrificed for accuracy or worse still, dark phrases are found to paper over underlying conflicts of view between different divisions within the Department. The outside academic may well find he has a skill in drafting which is of more use to the politician than that of the average civil servant.

Politicians are above all else communicators. They are in business to persuade both their colleagues and the public. They must sound clear, direct and decisive even when they are being somewhat evasive. They will want to attack—particularly when it is difficult to defend. But it is a mistake to judge the integrity of politicians by their behaviour in that strange theatre which is Parliament. How they behave within the four walls of the House of Commons is very different from the process of government which no book could give me. Second a much greater sense of humility. Outside one can easily convince oneself that there are no problems when they are not. One can shut one's eyes to the practical administrative problems of actually implementing a policy. The civil servants know the difficulties and they are real. They are not the academic who is simply along to give a shining, precisely how many public servants would be needed to do what they are proposing should be done. Thirdly, a knowledge of just how complex government involvement is. The academic who is not a member of the government will not know the intricacies of the

objectives which have to be kept in some sort of balance. The outside academic can easily convince himself and his students that the objectives which he sees as central from the perspective of his discipline must predominate over all other considerations. These conflicts are real and they become built into one's thinking when one has seen government in action.

But this is not to say that academics do not have an important role in a democratic society both as social critics and as purveyors of new ideas. Some half-baked schemes can be cooked into practicable policies in the well tested ovens of the civil service. Indeed this has been the genesis of a number of important policies which have been implemented. Academics and politicians should not however deceive themselves into believing that they have had a monopoly of innovation. Many new ideas have emerged from the civil service at least until 30 years have elapsed and the files are open.

If it is the task of academics to teach students about the real world, a spell in government is invaluable. It is a government always in the process of change. Media and academics too often convey a cynical view of the working of government and of the process of policy. They depict both politicians and those who serve them as knaves, fools or bunglers. This builds up their own status as the purveyors of truth, wisdom and integrity. This is too easy to see. It is easy enough to see the obvious solution if you only have a quarter of the facts. To simplify an issue is nearly always to distort it. The more students learn that civil servants and politicians are not the whole hard work of extra-ordinary complexity. The headmaster of democracy will be, but perhaps you have to see it to believe it.

The author is professor of social administration in the London School of Economics and Political Science. He served as a political adviser in the Department of Health and Social Security and the Department of the Environment under successive Labour governments.



Michael Stewart tests the strength of the grip which monetarist doctrine exerts on the minds of the highly placed. He dismisses Friedman's Hongkong as a false pointer to the path for contemporary Britain

Says about that in contemporary Britain the doctrine of monetarism is alive and well and comfortably ensconced in positions of power and influence. The prime minister, the chancellor of the exchequer, the number of other Cabinet ministers are monetarists, as is the recently appointed chief economic adviser to Government. The City of London is, needless to say, of overwhelmingly monetarist persuasion and at the academic level, the doctrine is firmly entrenched not only in the City University and the London Business School, but in a number of the major provincial universities as well. Monetarist views underlie a substantial proportion of the economic commentary published in the press, and the BBC largely devoted a large amount of recent Saturday evening time to the repetition of the views of the leading father of modern monetarism, Milton Friedman.

Nevertheless, although the doctrine is much more influential than it was 10 or even five years ago, it has by no means swept the board. In the Cabinet itself there appears to be a sizeable minority which is afflicted by doubts about the wisdom of some of the policies to which monetarist philosophy leads. Similarly, resistance to monetarism still persists high up in the Treasury and the Bank of England. Two of the three specialist advisers to the Prime Minister's Committee on Monetary Policy are non-monetarists in their approach.

In many of the universities, including both Oxford and Cambridge, monetarism has made relatively little headway. Although it is always dangerous to advance such generalizations, and particularly to try to quantify them, it seems a reasonable estimate that the proportion of the population that is concerned with macroeconomics theory or policy is split somewhere around the middle between monetarists and Keynesians.

This kind of split is a not-unfamiliar feature of academic life, which would indeed be somewhat surprising if it were not. The division in the economic world from most of the last century which occurred in other academic disciplines is its immediate relevance to the living standards of all of us this year, next year and the year after that. For which the argument is that the economic world is a significant difference in the nature of economic policy, and the path of development, unemployment and inflation over what period of time long-run when we are all dead. This is particularly true of the kind of economic policy which is the subject of the present article.

Although the intellectual divide cannot quite be compared with that of the 1930s—neither Friedman nor any other monetarist has produced a book which stands comparison with Keynes's *General Theory*—as a work of revolutionary ideas, the economists' divide at the working of the economy—the immediate practical implications are just as great, or greater, as the rights and wrongs of Keynes's prescriptions for the government's management of the economy are turning of its own accord.

On this reading, Keynesianism cannot be regarded as the kind of first-come, first-served practice in the Keynesian Wood Budget of 1941 and thereafter, has done more harm than good. There ought, of course, to be a foolproof way of testing these two theories, and this is a better explanation of the facts. But there isn't. The

At a time when all the forecasts pointed towards an absolute fall in the Gross Domestic Product (in real terms) and a sharp rise in unemployment, the Budget judgment was not, as would have been the case with a Keynesian budget, to increase demand, but to reduce it still further.

In consequence, the fall in the GDP in 1980 will be even bigger, and the rise in unemployment even greater, than was expected before the Budget.

Underlying this drastic change in what is deemed the appropriate medicine for the economy lies an equally drastic difference in the way that monetarists, compared with Keynesians, believe that the economy works.

To Keynesians, capitalist or mixed economies are fundamentally unstable. Long-term growth is attended by major short-term fluctuations in output and employment. In the course of a typical 19th century trade cycle, for example, unemployment would rise to 10 per cent or so before, after a shorter or longer pause, starting to fall again. Worse still, the economy can get stuck for long periods at the bottom of the cycle, and heavy unemployment can persist for many years—witness the slump that between the two wars averaged over 10 per cent, and during the 1930s averaged over 15 per cent.

The basic explanation of this, according to Keynes, is that such equilibrating or self-correcting mechanisms do not exist in the economy or are insufficiently powerful or quick-acting to ensure the maintenance of full employment, or the restoration of full employment after some external shock—except perhaps for the long-run when we are all dead. This is particularly true of the kind of economic policy which is the subject of the present article.

Monetarist policies, by contrast, derive from a view of the working of the economy which is much more closely akin to the classical economic theory which held sway in Britain for much of the nineteenth century: indeed monetarism can be seen as a development of Ricardo and John Stuart Mill. According to this theory, there are strong equilibrating pressures in the economy which ensure its fundamental stability.

Shocks to the system from changes in private investment or consumption at home, or adverse developments abroad, will only have a temporary effect. The forces of free enterprise and competition will ensure that capital and labour will move quite smoothly out of the sectors where demand has fallen and into other sectors where new demand is being created. In this way full employment will soon be re-established, and the process of economic development continued.

Government intervention which takes the form of increasing or reducing its own expenditure in relation to its revenue, is not only unnecessary, but positively harmful. Time lags in the operation of the instruments the government has at its disposal are sufficiently long and uncertain to make it likely that macroeconomic intervention will be destabilising rather than stabilising. The government's response to perceived or expected slumps or booms arising from developments in the private or foreign sectors will probably start to operate only after the equilibrating forces in the economy have come into play and the economy is turning of its own accord.

On this reading, Keynesianism cannot be regarded as the kind of first-come, first-served practice in the Keynesian Wood Budget of 1941 and thereafter, has done more harm than good. There ought, of course, to be a foolproof way of testing these two theories, and this is a better explanation of the facts. But there isn't. The

opposite may be true—lower expected sales may lead to a postponement of investment plans. Unless there happens to be a simultaneous rise in exports relative to imports, which there is no particular reason to expect, output will decline and unemployment will rise, a process which may be cumulative and lead to a recession of considerable length and depth.

The appropriate response in this situation is for the Government to increase its own demands on the economy by increasing its own expenditure, in relation to its revenue, deficit or, in contemporary terminology, incurring a larger Public Sector Borrowing Requirement (PSBR). Monetarist policies, by contrast, derive from a view of the working of the economy which is much more closely akin to the classical economic theory which held sway in Britain for much of the nineteenth century: indeed monetarism can be seen as a development of Ricardo and John Stuart Mill.

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This Milton's Paradise spells nothing but loss

At a time when all the forecasts pointed towards an absolute fall in the Gross Domestic Product (in real terms) and a sharp rise in unemployment, the Budget judgment was not, as would have been the case with a Keynesian budget, to increase demand, but to reduce it still further.

In consequence, the fall in the GDP in 1980 will be even bigger, and the rise in unemployment even greater, than was expected before the Budget.

Underlying this drastic change in what is deemed the appropriate medicine for the economy lies an equally drastic difference in the way that monetarists, compared with Keynesians, believe that the economy works.

To Keynesians, capitalist or mixed economies are fundamentally unstable. Long-term growth is attended by major short-term fluctuations in output and employment. In the course of a typical 19th century trade cycle, for example, unemployment would rise to 10 per cent or so before, after a shorter or longer pause, starting to fall again. Worse still, the economy can get stuck for long periods at the bottom of the cycle, and heavy unemployment can persist for many years—witness the slump that between the two wars averaged over 10 per cent, and during the 1930s averaged over 15 per cent.

The basic explanation of this, according to Keynes, is that such equilibrating or self-correcting mechanisms do not exist in the economy or are insufficiently powerful or quick-acting to ensure the maintenance of full employment, or the restoration of full employment after some external shock—except perhaps for the long-run when we are all dead. This is particularly true of the kind of economic policy which is the subject of the present article.

Although the intellectual divide cannot quite be compared with that of the 1930s—neither Friedman nor any other monetarist has produced a book which stands comparison with Keynes's *General Theory*—as a work of revolutionary ideas, the economists' divide at the working of the economy—the immediate practical implications are just as great, or greater, as the rights and wrongs of Keynes's prescriptions for the government's management of the economy are turning of its own accord.

On this reading, Keynesianism cannot be regarded as the kind of first-come, first-served practice in the Keynesian Wood Budget of 1941 and thereafter, has done more harm than good. There ought, of course, to be a foolproof way of testing these two theories, and this is a better explanation of the facts. But there isn't. The

direction of causality in the social sciences is sufficiently unclear, the role of untestable counterfactual hypotheses sufficiently crucial, the length and consistency of the appropriate time lags sufficiently controversial and the relevance of the available data sufficiently questionable to enable a wide range of initial presumptions to be range confirmed, at least not invalidated.

What is it, then, that determines these initial presumptions? Before tackling this question, it is necessary to examine another, and more immediately topical, monetarist. For the monetarist philosophy has established on the present Government's economic policies does not stem simply from the claim that the economy is naturally unstable and regulating it from the monetarist claim to have the answer to the most pressing economic problem of the day: inflation.

The monetarist explanation of inflation is directly derived from the Quantity Theory of Money, a doctrine generally associated with the work of the 19th-century economist, Irving Fisher, though traceable back to the writings of David Hume in the middle of the eighteenth century, and much stressed of late by the work of Milton Friedman. The Quantity Theory of Money, in its simplest form, states that the money supply, multiplied by the average velocity with which it circulates in the course of a year, must equal the number of physical transactions that take place in the economy during a year, multiplied by their average price. The Quantity Theory asserts that since the velocity of circulation is a relatively stable, or at any rate, change only slowly and predictably, there must be a very close link between the supply of money and the average price level. The former, it is claimed, determines the latter. In short, changes in the money supply determine the inflation rate.

In Britain, where the underlying growth of the country's productive potential may be put, optimistically, at 3 per cent a year, a zero inflation rate implies a growth of the money supply of no more than 3 per cent. Hence, given the overwhelming priority now accorded to the reduction of the inflation rate, the central economic objective of the present government is a reduction in the growth of the money supply.

The Chancellor's declared intention of reducing it from the present growth of 12 per cent or so to something in the range of 4-8 per cent by 1983-84 would still, strictly speaking, imply an inflation rate of roughly 2 per cent a year, but compared with the present nudging 20 per cent rate, who is going to quarrel with that?

The drastic reduction planned in the PSBR, from 4.75 per cent of the GDP in 1979-80 to 1.5 per cent in 1983-84, is to be regarded essentially as the instrument whereby the growth of the money supply is to be reduced, since the Government believes (wrongly, Keynesians would argue) that the size of the PSBR is much the most important determinant of the growth of the money supply.

As with the theory that the economy is fundamentally stable, so with the theory that inflation is determined by changes in the money supply, tests ought to be applicable which satisfy reasonable men one way or the other, but they aren't. Keynesians would argue that the advanced industrial economies, and particularly in Britain, where unions are very powerful and concepts of "fairness" together with the influence of traditional differentials and relationships, are crucial factors in wage bargaining. It is wage demands, determined by recent and expected price increases, and by the size of wage increases granted elsewhere in the economy, that are the prime movers of the system.

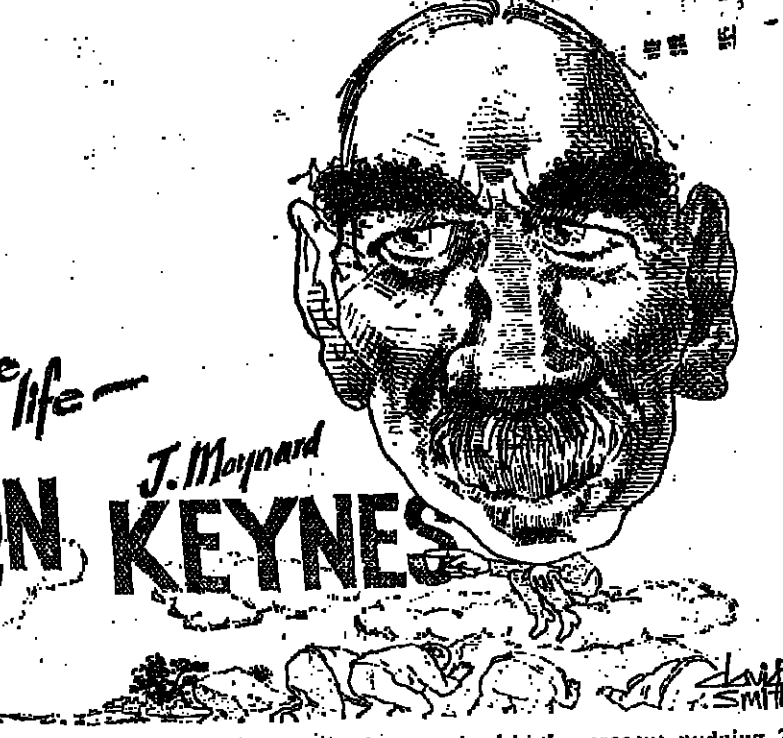
The money supply, over which in any case the authorities exercise only the most imperfect control, accommodates itself, to the level of wage demands conceded by employers, and subsequently passed on by them in higher prices. The only effective answer to this is an incomes policy which operates directly on the size of wage and price increases.

Attempts to cope with the problem by reducing the growth of the money supply, whether by reducing the PSBR or by permitting interest rates to rise to levels which choke off the demand for credit by the private sector, will, assuming the money supply can be reduced to this way, have the effect of reducing the inflation rate to any significant extent, but of reducing the volume of transactions in the economy. Except in some theoretical long run, too far away to be of relevance to the economic and political system we live in, it is output and employment, rather than prices, which will bear the brunt of tight fiscal and monetary policies.

Whether this view is correct will never be unanimously conceded: the logic of the earlier argument about the difficulty of validating fundamental theories in the social sciences, together with the evolutionary nature of society's attitudes and institutions, and the inevitability with which this evolution renders obsolete theories and generalizations that were once illuminating, tend to dispute. The present Government's announced intentions and policies represent a clear-cut test of monetarist theories, and precisely as one could expect to find, in a few years' time, fiercer criticisms about their validity will probably be drawn than is possible at the moment.

If one were to venture a prediction about what such conclusions might be, the answer would surely be as follows. Monetarists were correct in stressing that a restrictive monetary policy can contribute to the reduction of inflation. But there isn't. The

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from page 11

The author is reader in political economy at University College, London and was formerly an economist in the Treasury, Cabinet and Foreign Office.



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TABLE
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reductively

make up academic differences are small, relative differences are small, consistent in direction. The opinions of the "connected" emphasize on research and, as Table 2, the published

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Scott: a novelist to be swallowed whole



... to the "Free Church of Scotland"—in

Whether this or any other kind of appreciative discussion of St. John will lead to his re-emergence as a popular novelist is another question. We no longer dismiss him in a preposterously unfair way in which E. M. Forster dismissed him. He has lost the mass readership he enjoyed in the last century and it is hard to see how it can be regained.

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he dismisses Eric Quayle. The ruin of Sir Walter Solesbury. But in fact there are a few odd things about his behaviour and it might be better if Wilson had consulted them. When in 1813 he was bankrupted by borrowing, his friend John Morritt to the cost of insuring his life for £100,000 was in favour of the Duke of Devonshire.

other occasions, in his discussion of the *Antiquary* for example, is both original and persuasive. In more specific and unusual cases, his book is an invaluable guide; in general, his book is an invaluable guide. Whether it is accepted or not, it is attractively presented.

David Daiches is emeritus professor of English at the University of Sussex.

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The author is director of social studies at the University of Chicago.

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BOOKS

Picturesque poverty

The Dark Side of the Landscape: the rural poor in English painting 1730-1840
by John Barrell
Cambridge University Press, £15.00
ISBN 0 521 22509 4

John Barrell's book is written against those who would see in the paintings of Gainsborough, George Morland and Constable only idyllic images of a Merry, rural England. "To a leftist like me," as Barrell eloquently confesses, it is disturbing to glorify a world where "some men should work while others do not". Instead, Barrell seeks to demonstrate that Constable's labourers are "serfs" ("the basis of his social harmony is social division") and that the painter set them well back into the landscapes, involved in the natural world, in order to reassure purchasers that the work was pleasant, proper and unthreatening. Likewise, the other two painters discussed engage with the rural scene only to preserve the rather than describe—"the poor must be shown at work, not because that is what they do, but because that is what they ought to do".

The Dark Side of the Landscape takes for granted the work of E. P. Thompson and others on the actualities of eighteenth-century rural poor and then brings into striking contrast with it the images of various artists: it isolates painting's paradoxical response both to a demand for more realism in the depiction of the countryside and yet to the constraints upon how the poor could or could not be represented. The appearance, for example, of real ploughmen in Gainsborough's *Woodcutter* and Constable's *Woodcutter* is a *Widdow's* "was bound," we are told, "to release issues about their relation to the classes for whom that art was produced." On that point we have largely in the author's word for it, the premise once accepted, some most interesting discussions of particular paintings that follow are often telling and persuasive. But the absence of any proper attention to contemporary writers' responses and to the artists' own consciousness of social constraints (Morland, sometimes excepted, makes for a rather shaky foundation).

In looking, as he puts it, below the surface of paintings, Barrell occasionally invokes literary material "to facilitate the translation into a more explicit medium of what can only be implied by a pictorial image." As a procedure for "reading" paintings this has proved most rewarding for other literary critics of eighteenth-century

arts such as Ronald Paulson; Barrell, too, uses it well. Yet his own translations of what he claims is implied in the visual examples are often tendentious (though at one point he tells us he would be disappointed if they were not). He is extremely adept—sometimes transparently so—at manipulating the verbal commentary: "left to tangle the wide cornfield on his own," tempts us to share his concern for the exploited labourer; his account of the man helping a girl into Gainsborough's *Harvest Wagon* (1767 version) "more concerned to get the job done than consideration for her comfort"—is needed for his argument but hard to find in the visual "text". Similarly, the man bearing wood towards Constable's *Conquest of the Children* is "deformed"; Morland's men at the *Alouette* is "safe to assume," are talking politics and are therefore sons of Liberty, a fairly radical image. Constable's ploughmen in the *Widdow's* keep his eye "doggedly" on the progress of his ploughshare through the earth and a few pages later he becomes the "overworked ploughman".

Find those loaded commentaries irritating, at least because I feel Barrell could make his case just as persuasively without them, his pages are likewise spoilt by an apparent ignorance of country matters—ploughmen do need to keep their eye on the plough, horsemen do have to bend down in talk to standing persons, scythes have to be sharpened (and the activity is both work and a break from the action of scything), and women are often better dressed than their menfolk. More range of reference in his pictorial examples would have probably sharpened the somewhat rather over-generalized claims of the introductory chapter—especially works like those John Harris has displayed in his recent *The Artist and the Country House* might have preserved some sweeping statements about aristocratic attitudes towards estates and estate management.

Yet it is not simply the courteous finale of a reviewer to say that, though my text of Barrell's book is heavily annotated with my objections to his analyses, he will successfully determine my view of such pictures for a long time come. His chapter on Morland, although—as he admits—it works with a very few examples of the artist's work, is itself a valuable contribution, not least because Morland seems to have shared Barrell's own ideologies.

John Dixon Hunt

John Dixon Hunt is professor of English at Bedford College, London.

British politics today
A students' guide

Bill Jones and Dennis Kavanagh (editors)

Student response to *British politics today* has been enthusiastic and appreciative and this outstandingly successful introduction is now reprinted with up-to-date amendments. New sections discuss events since the Conservative election victory and the radical change of course initiated by Mrs Thatcher's government. Arguments and issues for study are set out concisely and authoritatively, and the note-style presentation directs the students' attention to the essential points.

... because of its relevance and practicability, it deserves to succeed. —*Parliamentary Affairs*

... one welcomes this particularly good introductory book. —*British Book News*

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Manchester University Press
Oxford Road Manchester M13 9PL



Pascal

Pascal
by Alban Krähelheimer
Oxford University Press, £3.50 and 95p
ISBN 0 19 287513 2 and 287512 4

It might be argued that there is a certain ambiguity in the general title "Pascal Masters" bestowed on this new Oxford series, but at least it has allowed this author to proceed to his task without wasting time over what Pascal actually was. For this task Dr Krähelheimer is admirably fitted, as recent translator of both the *Provinciales* and the *Pensées*, able to select precisely those quotations and references which, subject to limitations of space, are likely to prove most helpful to the uninitiated. While the main emphasis falls, as it must, on the *Pensées*, considered here as a bestseller, this compact introduction includes at least the essential information about Pascal's scientific work, without which even his moral and religious writings cannot be fully understood or properly judged.

In so far as there is a thesis, it is the unexceptionable one that Pascal's unusual life forms a coherent whole, and that the *Pensées* derived from that life as they could from no other. Actual biographical details after which Dr Krähelheimer is free to trace from the inside the development of an extraordinary mind.

The chapter heading "Science and Technology" indicates, perhaps, a relative thinness in the treatment of the mathematics, as compared to the physics; but attention is justifiably concentrated on those works, such as the vacuum which, even before Pascal's conversion, point towards the subsequent religious writings, in developing a tripartite theory of knowledge which must, eventually, link up with the famous Three Orders.

For Dr Krähelheimer this is the concept which explains the coherence of Pascal's work; and despite the possibility of terminological quibbles, it is certain that no better key can be found to the interdependence of the mathematical, scientific, religious, and polemical and devotional aspects which might otherwise seem disconnectedly different. In general, therefore, Dr Krähelheimer's handling of Pascal's broad intellectual expanse provides a solid grounding for the discussion of the *Provinciales* and the *Pensées*. Unfortunately, however, lack of space has necessitated the omission of references to the *Œuvres sur la Grâce* which, and though they may seem, do the least to shed light on Pascal's rationalizations of Augustinian doctrine which are not necessarily transmitted by the *Pensées*, or, indeed, by the examples of private spirituality furnished by the *Mémorial*, the *Mystère de Jésus*, or the letters to Charlotte de Roannez, cited here as a supplement to the major works.

As for the *Pensées* themselves, Dr Krähelheimer's exposition of the structure and themes is as comprehensive as could reasonably be expected, and it would be difficult to fault his pattern of the scheme of the *First Copy* he retains for the "hinge" of the whole enterprise, despite the reservations as to Pascal's intentions which continue to be expressed in the recent Le Guern edition, for example. But it still makes sense to do so; and it underlines the connection between the famous fragment and the ubiquitous "Three Orders". Justifiably, the writer's element in the apologetic scheme must seem to lie in the use of the historical evidence for Christianity, and Dr Krähelheimer has not evaded the problems posed by Pascal's fundamentalism. But it is really claimed that conversion in Pascal was motivated by scientific approach to the facts, and his intellectual openness; and, if this is so, no serious reader would disagree.

All in all, this introductory study is excellent value.

T. H. Broome

T. H. Broome is professor of Philosophy at the University of Oxford.



This Chinese silk tapestry, depicting a parakeet on a cherry twig, is from the thirteenth century, and is an example of the way contemporary painting of flowers and birds lent itself to reproduction in the textile. It is reproduced from Mary Tregear's *Chinese Art* (Thames and Hudson, £5.95 and £2.95), which traces the development of the visual arts in response to neolithic, theocratic and feudal social systems, and emphasises the importance of the tradition of the scholar-painter.

Nietzsche's sufferings

Nietzsche: a critical life
by Ronald Hayman
Weidenfeld & Nicolson, £18.50
ISBN 0 297 77636 3

What does this new biography of Nietzsche offer that the last one did not? Preeminently, more misery: the pains of Nietzsche's post-professional headaches, the ravely relieved, near-blindness, the countless hotel-room, mostly freezing cold, all over southern Europe (usually, alas), quest of a bearable climate and ambience; the almost total public isolation and the down and the pathetic, helpless last years—all these grim, often repetitive trivia press upon us. And they are certainly a necessary picture for the full understanding of a philosophy so full of gestures of triumph and superiority.

Perhaps surprisingly, given this preoccupation with suffering, the argument is not in any simple way reductive: Nietzsche's key concepts of animal and cultural health are presented as the compensations of a failing organism. On the contrary, the physical sufferings are interpreted as products of Nietzsche's intellectual life: "he was, more directly than any other thinker, living out in a system of belief now discarded, and 'the relevance of his life to his final breakdown were not organic'. It is a big 'if'. Observe the diagnosis of Nietzsche's disease may be (and but there is no lack of evidence in his life, his family background, such that it is a touch melodramatic to suppose it was all psycho—(or philosophico—)sonic."

It is not even true that philosophy was wholly traumatic for Nietzsche; whether or not because it was a compensatory activity, his writing frequently has a euphoric note and arose in euphoric moods, which are here much underplayed. It is not clear why we should suppose that Nietzsche would never have completed his planned "valuation of all values" (he had already revealed many of them, that "only madness could save him from the realization that he would do it"). True, he himself sometimes dramatized his lone exploration of delectable philosophical terrain; but the principal pain, it is claimed, was the direct strain on his eyes of reading and writing—something which, as Mr Hayman shows, had a simple and immediate bearing on the discontinuous, aphoristic method of great parts of his oeuvre. To speculate that the strain of philosophizing produced the discomfort of the life which produced the philosophy, while in a sense making a circular argument from which the philosopher's biography could drop out altogether, but Mr Hayman does see causal factors in

the life determining the general shape of the thought. These are psychological, impulses towards self-censorship and self-denial which generated both the pattern of Nietzsche's external life and the characteristically strenuous and painful processes he set such store by in his thinking—self-criticism, self-transcendence, sublimation.

Or again, a "lifelong impatience with mediocrity" compelled him towards the revaluation of values. It can be argued that these things begin as personal responses and imperatives and grow into philosophical and cultural prescriptions. But the argument needs a right rain last, we dissolve when (despite Nietzsche's allegedly non-systematic quality) a fairly coherent intellectual system into a pattern of personal drives. Such psychologizing cannot account for the quality of Nietzsche's insights, for his capacity to create radical and intuitively convincing hypotheses about Man's cultural, intellectual, religious and social past, of the kind that impressed Burckhardt and leads Mr Hayman to call him a "stepping stone between La Rochefoucauld and Freud": the notions of master and slave morality, the transformation of "good/bad" into "evil/good", and the notion of the will to power which is the basic mechanism for these psycho-historical processes (all of them concepts less appreciated than they ought to be because they are thought to be the hideous things Nazism made them seem). Inevitably, the biographer feels he has their roots in his grasp, whereas in fact their specific nature is an unpredictable, irreducible growth.

It is clear that Mr Hayman would have wanted to say more about the ideas themselves. Apart from a fairly brief introduction and conclusion, they fit awkwardly into the biographical structure (given more space, they would have broken it up altogether). It does find room to say what is provocative, and always (like the narrative itself) readable. One could have wished for a clearer link out of Nietzsche's ground-plan, the concepts just mentioned, the interrelation, and the philosophical plan that his "valuation" was a final "escape". True, he himself sometimes dramatized his lone exploration of delectable philosophical terrain; but the principal pain, it is claimed, was the direct strain on his eyes of reading and writing—something which, as Mr Hayman shows, had a simple and immediate bearing on the discontinuous, aphoristic method of great parts of his oeuvre. To speculate that the strain of philosophizing produced the discomfort of the life which produced the philosophy, while in a sense making a circular argument from which the philosopher's biography could drop out altogether, but Mr Hayman does see causal factors in

T. J. Reid

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BOOKS

Giant of engineering

The Works of Isambard Kingdom Brunel
edited by Alfred A. Pugsley
Cambridge University Press, £8.95
ISBN 0 521 23239 2

In surveying the history of men's endeavours and achievements, one does not emerge with startling clarity as to the particular field in which a handful of names are associated with no exception. Just as Newton, Gauss and Einstein are associated with mathematics and physics, so the names of Isambard Kingdom Brunel are indissolubly linked with inspired engineering achievement.

Brunel is rightly considered a giant among engineers, growing up and working in the period of extensive engineering expansion during the industrial revolution of the first half of the nineteenth century. His engineering was rather arbitrarily divided into its present-day disciplines. During this period Brunel and his contemporaries raised engineering to a new social level and gave it professional status.

This book, admirably produced, describes with great scholarship the enormous range of achievements of this eminent Victorian, achievements incredibly produced in a life spanning only 55 years. In it, a number of significant and outstanding achievements are described in one of the many fields encompassed by engineering, have each contributed a

chapter to the book. In these chapters his work is described and critically examined in terms of the engineering knowledge of both his own time and that of the present day. In order to do this, each contributor has referred to Brunel's original drawings, calculations and letters, and has studied the Brunel papers at the University of Bristol.

Brunel's engineering output was enormous, covering almost every field of activity of his time. His great civil engineering works include the Clifton Suspension Bridge and the Royal Albert Bridge at Saltash, together with a large number of tunnels, a railway, for which he became the engineer in charge—and a vast number of beautiful timber structures. Of his other great achievements, the design and construction of the three-funnel, ship-shaped *Great Western*, *Great Britain* and *Great Eastern* steamships, and the *Great Eastern* cable, are vividly described in the book.

The first and last chapters differ in character from the others. The opening chapter is devoted to a personal description of Brunel as a person, describing his attitudes to those working with him, and the final chapter considers the state of theoretical knowledge of his time and relates Brunel's work to this background.

After explaining seven chapters, each describe a particular field of engineering in which Brunel was involved. The first of these is devoted to a detailed and vivid

description of Brunel's tunnelling works, the construction of which played such a vital role in his life. It was in his involvement with his father's Thames Tunnel that Brunel began his work as an engineer at the age of 18. When, at 27, he was appointed engineer to the Great Western Railway, this background meant with the vast number of tunnels required for the developing railway system.

At the age of 25, Brunel obtained his first independent project, the design of the Clifton Suspension Bridge. In this magnificent structure, described in the next chapter, Brunel's characteristics of confidence and inspiration become strikingly apparent.

The following three chapters deal with Brunel's work associated with the developing railways. His versatility and independence are again displayed in his conception and design of the broad gauge and the atmospheric system of traction, and atmospheric system of traction, and the design of these is included in an first of these chapters. Of his railway bridges and viaducts, these are conveniently treated in two chapters, one dealing with the brick and masonry structures which bridge the river arch bridges, and the other with his prodigious number of works in timber, a medium in which he was possibly the greatest designer known in this country.

The following chapter describes how the theory and practice of naval architecture were substantially advanced by the conception and design of Brunel's three great ships, in which his most important innovation was in size and the "economies of scale". Finally, the conception, design and construction of the beautiful Royal Albert Bridge over the River Tamar is given a detailed treatment, including a description of the maintenance of the bridge.

In conclusion, although the inclusion of a chronology of Brunel's career and achievements would perhaps have produced a more unified picture of the development of his work, nevertheless this book is a fascinating study of a man and his works, superbly written by engineers for engineers. The quoting of original documents brings each chapter vividly to life, and each contributor is to be congratulated for the painstaking work and scholarship which has produced a book that, when once opened, is difficult to put down until the final page is turned.

D. J. Just

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Royal Albert Bridge at Saltash near Plymouth.

Graph and network theory

Graphs and Networks
by Leonard Corradi
Clarendon/Oxford University Press,
£14.00 and £7.50
ISBN 0 19 859615 4 and 859622 7

Ten years ago, graph theory was rather neglected save by a few specialists. It now has a large literature, including several conference proceedings in the guise of books. In discussing what may seem to be as yet another introductory text, the reviewer's main task is to distinguish it from the field. This book does in fact have a distinctive flavour, deriving both from what it includes and what it omits.

To take the inclusions first: Corradi is very strong on algebraic theory, and indeed begins with a chapter on algebra, building up a brief but quite powerful treatment of matrices to which most of the next three chapters (making up more than half the book) depend. A great variety of problems relating to paths, circuits and connectivity are treated by algebraic means. Diverse problems, including the existence of a Hamiltonian path and the listing of paths, are subsumed under a common approach by defining suitable matrices for each of the elements being studied. Boolean variables and real numbers, subsets of edges, and so on, but the algebraic structure being the same. Given the algebraic approach, then, a great variety of problems become amenable to a common method of solution.

of the whole book applies a variant of conventional matrix theory to the solution of matrix equations the elements of which are those of the "path algebra" in many well-known techniques, while introducing several other methods which are either new or little known.

The book also has an algorithmic emphasis, both in that algorithms for solving problems are presented explicitly, and in that the application of graph theory to algorithms is generally discussed. For example, the relation of algorithmic structure to transverse ordering of trees, neatly unifies quite a lot of material, and the topics of matchings and of flows in networks, also well presented, are treated with an algebraic flavour.

There is a brief discussion of algorithmic complexity, which leads me to my only caveat. Corradi (page 81) that the well-known "Travelling salesman problem" is NP-complete. Other than this, the book is a masterpiece of clarity and insight. A great variety of problems relating to paths, circuits and connectivity are treated by algebraic means. Diverse problems, including the existence of a Hamiltonian path and the listing of paths, are subsumed under a common approach by defining suitable matrices for each of the elements being studied. Boolean variables and real numbers, subsets of edges, and so on, but the algebraic structure being the same. Given the algebraic approach, then, a great variety of problems become amenable to a common method of solution.

Something must also be said about the non-algebraic tradition in graph theory, springing from the pioneer work of König and Ore, and presented superbly in the modern texts of a highly extensive and lively conference series. The reader well versed in this tradition will not find Corradi's book a disappointment.

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K. W. Cattermole is chairman of the department of electrical engineering at the University of Essex.

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Nam P Suh is Professor of Mechanical Engineering at MIT; he also directs MIT's Laboratory for Manufacturing and Productivity and the Institute's Polymer Processing Program. Nannaji Saka is Lecturer and Research Associate in MIT's Department of Mechanical Engineering.
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Introduction to Fluid Mechanics
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The second edition of *Introduction to Fluid Mechanics* differs from the first by conversion to the exclusive use of SI units, by addition of a chapter on the dynamic response and control of flow systems, and by a considerable increase in the number of problems at the end of the chapters. The aim is to instruct undergraduate engineers in the basic principles of fluid mechanics and to show how they may be used to find the flow characteristics of industrial equipment.

Efforts have been made to avoid use of mathematical methods that might confuse the average student, and the bulk of the book is approached using the technique of requiring conservation of mass,

momentum and energy within control volumes. Indeed, although vectors and partial differential equations do appear, it is only at an elementary level.

The advantage of using the control volume technique lies in the clear physical meaning of the derived equations, but it may be necessary to use results that cannot be obtained by such methods. One example is the treatment of skin friction drag by a turbulent boundary layer on a flat plate. To use the Kármán integral method, it is necessary to provide a velocity profile in terms of skin friction, which is not obtainable from the boundary layer equations. The authors quote the 1/7-power profile and show that it is consistent with the Blasius friction law. I believe that a better approach would be to postulate a law of the wall of a form consistent with the dimensional argument of dependence on friction velocity, viscosity and distance

from wall, and from there to derive the friction law. Better still, to use the logarithmic profile which leads to a Schlichting relation that is not limited in validity to Reynolds numbers below 10⁷.

However, most users of the book will be satisfied with methods for quantitative calculation of real flows, and the sections on pipe flow, on turbomachinery, and on the budding engineer, from references are made to industrial machines such as jet engines and turbines, further emphasizing the practical value of the calculations. The sections on oceanographic flow and on control are less comprehensive.

A. A. Townsend

A. A. Townsend is reader in experimental fluid mechanics at the University of Cambridge.

Electronic devices misconceived

Electronic Devices
by F. R. Connor
Arnold, £3.95
ISBN 0 7131 3413 5

The whole field of electronic devices is a particularly active one at present and new developments occur extremely rapidly. There is therefore always a need for new books, at all levels, to enable students, teachers and researchers to keep abreast of developments. To date it is remarkable how well some of the major publishing companies have catered for this need. This short introductory book is claimed to be ideal as a basis for undergraduate electrical engineering courses and is also claimed to be suitable for HNC/HND and A-level students.

Following the introduction the book has five short chapters which deal with atomic theory, semiconductor theory, solid-state devices, electron dynamics and vacuum devices. The chapter on solid-state devices includes diodes, junction and field effect transistors, masers and lasers; but devices such as Gunn diodes and charge-coupled devices are included as short appendices. The chapter on vacuum devices includes the vacuum diode, triode, pentode, cathode ray and colour television tubes and, astonishingly, light-emitting diodes, photoconductive cells and solar cells. It is stated that these solid-state devices have been included with vacuum devices (those "whose proper operation depends on a good vacuum") for "convenience" even though there is a separate chapter on solid-state devices into which they would naturally fit. Each chapter contains examples with model solutions, and indeed some topics, such as the quantum mechanical tunnelling of electrons through a potential barrier, are introduced in this way. There are also problems with answers, included at the end of the book.

In a short book of this kind it is obviously difficult to do justice to

all topics considered, even at an elementary level. Of necessity, phenomena such as photoelectric field and secondary electron emission have each been dealt with in a few sentences, as indeed have a number of solid-state devices. Rightly, more space has been devoted to the general fundamental principles of device operation and the development of these principles from atomic theory. On balance, however, it could be justifiably argued that the book would serve a better purpose had it been confined to a smaller number of devices. In particular, vacuum devices could have been omitted as they are covered at all levels in almost every book on electronics and the space could have been used more profitably to discuss solid-state devices and their basis in more detail.

In an introductory book it is desirable to present complex facts in as simple a way as possible but it is also essential to avoid presenting facts in a way that is misleading. As it is important to make clear what assumptions and approximations are being made and what their limitations are, in this respect this book is successful. The discussion of atomic theory and its development from quantum theory leaves a great deal to be desired and contains some serious misconceptions. The concept of effective mass of electrons and holes in solids is introduced and used without comment or explanation, and the treatment of the mobilities of electrons and holes in semi-conductors contains some serious misconceptions.

The discussion of "holes" in semiconductors is grossly oversimplified and no comment is made of the complete inadequacy of the band model used and its inconsistency with the Hall effect experiment. Some of the errors (such as gold being a shallow donor in silicon) may be typographical in origin but in many sections the general presentation leaves much to be desired. However, typographical

errors alone cannot account for the inaccuracies that occur in almost every chapter.

In short, therefore, I would not be willing to recommend this book to students at any level; neither could I recommend it to any library. In the preface of the book it is stated that it will be of considerable use to practising scientists and engineers in industry who require a ready source of basic knowledge to help them with their applied work. I would not recommend it to them. The author states that he "will be grateful to his readers for drawing his attention to errors which may have occurred". I hope he is well-prepared for the response.

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R. H. Williams is professor of physics at the New University of Ulster, Coleraine, Northern Ireland.

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Only imagination rules

The Silicon Civilization
by Alan Burditt and Elaine Williams
W. H. Allen, £6.95
ISBN 0 491 02730 3

Revolution in Miniature: the history and impact of semiconductor electronics
by Ernest Braun and Stuart Macdonald
Cambridge University Press, £4.50
ISBN 0 521 29799 0

The Challenge of the Chip
by W. H. Allen
HMSO, £1.25
ISBN 0 11 290330 4

One of the pleasures, or at least interests, in reviewing is to compare the impact a book has made on one's own perceptions with the reviewers. Sometimes the contrast is stark, although there is always the consolation of claiming to have heard a different drummer. More often, the feeling is one of "Yes, so it is".

So it is with the rightly well-acclaimed volume by Alan Burditt and Elaine Williams, *The Silicon Civilization*. Despite the outpourings in the past two years, no book before this so well covers the pervasive impact of microelectronics on the world of the 1980s. The book is a masterpiece of accessible use to practising scientists and engineers in industry who require a ready source of basic knowledge to help them with their applied work. I would not recommend it to them.

The authors state that he "will be grateful to his readers for drawing his attention to errors which may have occurred". I hope he is well-prepared for the response.

R. H. Williams

R. H. Williams is professor of physics at the New University of Ulster, Coleraine, Northern Ireland.

In discussing the impact of microelectronics in the home, the use of home computing and the battle between teletext and Prestel ignores the convergence of these forms of equipment and the vista of broadband/stored teletext. These supplementary issues could completely change the picture, and I am sorry they were not considered in more detail.

In contrast, the much less ambitious book by Braun and Macdonald, *Revolution in Miniature* is more accurate but also more accurate in style. Now published in paperback (the hardback version first appeared two years ago) its predominantly historical perspective has, however, suffered little from the passage of time. As far as the history of the early development of electronics is concerned, Braun and Macdonald are more precise, and may be said to have done for the Shockley era at Bell Laboratories what *The Double Helix* did for the discovery of DNA. In another period of confused development, on the product and application implications of microelectronics, they have less of the cataloguing mind than Burditt and Williams, probably recognizing those shrewd authors are technically journeymen, and the book is written in a style which slides between the technical issues, neither over-simplifying nor over-estimating the knowledge of a general reader. It should prove useful and informative for all those looking for a broad, based introduction to an increasingly important subject. At times, however, it slips into the impersonal, the "committee" product, and the obvious with an embarrassing pretentiousness.

On first reading the authors may seem preoccupied; but occasional half-truths and slipshod assertions may this stance, and reveal the product of a journalistic approach of a journalist. Which will rapidly be out-dated. To take some examples, it is not true that "no information is involved" in electric as opposed to electronic current (page 14). The discussion of computerizing office functions ignores "the possibility that the office will evolve (page 16), just as the vast activity today

of data processing was inside the "office" before 1960. To list the major semiconductor manufacturers as "the silicon six" (page 58) ignores the actual major manufacturer, IBM, at some point. Sony was not the first transistor radio manufacturer (page 61), but was the first to miniaturize the other radio parts around the transistor. The discussion on CMOS and GEC-Fairchild (page 64) rapidly evolves, and presents a possibly clearer picture—that the supply industry for the United Kingdom may be necessary but not sufficient, and the applications industry necessary and perhaps sufficient for more relevance to a United Kingdom faced with priority choices. On page 102 the rightful recognition of Zuse as the modern pioneer would be placed in better context if accompanied by explanation of his explicit refusal to make the final step to self-controlled computer on ethical grounds. Jay Forrester, that enigmatic figure brooding over the early days, passed on his core patent royalties to MIT (page 116). And so on.

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

Official Appointments
Appointments wanted
Other classifications
Awards
Announcements
Exhibitions
Personal
Courses
Holidays and Accommodation

in his own business. He has been in the same position for 10 years. He is a very capable man and is expected to take over the business in the near future. He is a very capable man and is expected to take over the business in the near future. He is a very capable man and is expected to take over the business in the near future.

Universities continued

SHEFFIELD THE UNIVERSITY

DEPARTMENT OF MATHEMATICS
CLASSES AND POSTGRADUATE
TECHNICAL LECTURESHIP
IN QUANTUM PHYSICS

Post supported by the United Kingdom Atomic Energy Authority for a period of five years, the successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Physics and be able to assist in the development of computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Physics and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Mathematics, Sheffield University, Sheffield S10 2TN. Closing date 1st July 1980.

STIRLING THE UNIVERSITY

CHAIR OF BUSINESS STUDIES

Applications are invited for a Chair of Business Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Business Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Business Studies, Stirling University, Stirling FK9 4LA. Closing date 1st July 1980.

SUSSEX THE UNIVERSITY

EDUCATION AREA

School Council-Funded Project. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Education and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Education, Sussex University, Brighton BN1 9QJ. Closing date 1st July 1980.

Fellowships and Studentships

EXETER THE UNIVERSITY

POSTGRADUATE FELLOWSHIP

Applications are invited for a Postgraduate Fellowship. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in the relevant field and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Education, Exeter University, Exeter EX4 4JF. Closing date 1st July 1980.

MANCHESTER THE UNIVERSITY OF

DEPARTMENT OF CHEMISTRY

Applications are invited for a Postgraduate Fellowship. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Chemistry and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Chemistry, Manchester University, Manchester M13 9PL. Closing date 1st July 1980.

SHEFFIELD CITY POLYTECHNIC

DEPARTMENT OF BUILDING

PRINCIPAL LECTURER IN CONSTRUCTION TECHNOLOGY

Applications are invited for a Principal Lecturer in Construction Technology. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Construction Technology and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

SHEFFIELD CITY POLYTECHNIC

DEPARTMENT OF BUILDING

PRINCIPAL LECTURER IN CONSTRUCTION TECHNOLOGY

Applications are invited for a Principal Lecturer in Construction Technology. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Construction Technology and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

ROYAL NAVAL ENGINEERING COLLEGE

MANADON, PLYMOUTH, DEVON

Junior and Senior Research Fellowships

Vacancies in the fields of Marine Power Plant, System Controls, Structural Mechanics, Underwater Acoustics, and Engineering Materials.

The activities of the College cover a wide range of research in the above fields primarily aimed at serving the needs of the Royal Navy.

Appointments at the appropriate level will be for a fixed period of up to three years.

Depending on qualifications and experience, stipends will be fixed within the following ranges:

Junior Research Fellow £4,545 to £5,701

Senior Research Fellow £5,263 to £7,712 (both under review)

Qualifications: Junior Research Fellow: Candidates must have a first or second-class honours degree with at least two years postgraduate research experience.

Senior Research Fellow: Candidates must have a first or second-class honours degree with at least three years postgraduate research experience.

Application forms, quoting reference AX697/151.301/AXS, for return by July 31, from Scientific Personnel Officer, Admiralty Underwater Weapon Establishment, Portland, Dorset; telephone Portland (0305) 820381, extension 3433.

UNIVERSITY OF WALES

colleges of Swansea

CASE Studentship

Applications are invited for an MSc CASE Studentship in the Department of Metallurgy and Materials Technology, for a research project on High Temperature Composites, for Arthropods.

Applications to be submitted in collaboration with the Ministry of Defence. Applicants should be graduates in Chemistry, Physics, Metallurgy or Materials and the successful candidate will work on a new tertiary system consisting of carbon fibre in a carbon matrix which will lead to improved high temperature materials for aerospace applications.

Applications should be sent to Dr. C. M. Jones, Department of Metallurgy and Materials Technology, University College of Swansea, Singleton Park, Swansea SA2 8PP.

Polytechnics

IRGIT

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN

SCHOOL OF ELECTRONIC AND ELECTRICAL ENGINEERING

LECTURERS

for degree and diploma courses and to participate in research and consultancy.

Honours degree in Electronic/Electrical Engineering or related discipline required.

Industrial and/or research and/or lecturing experience in:

General Electronics, Digital Systems and Microprocessor, Applications, Control Communications or Computer Technology.

Salary range £5,905-£11,207 per annum. Assistance with removal expenses.

Details from: Secretary, Robert Gordon's Institute of Technology, Schoolhill, Aberdeen AB9 1FR. (0224 574511).

SHEFFIELD CITY POLYTECHNIC

DEPARTMENT OF BUILDING

PRINCIPAL LECTURER IN CONSTRUCTION TECHNOLOGY

Applications are invited for a Principal Lecturer in Construction Technology. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Construction Technology and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

IRGIT

ROBERT GORDON'S INSTITUTE OF TECHNOLOGY, ABERDEEN

GRAY'S SCHOOL OF ART

SENIOR LECTURESHIPS AND LECTURESHIPS

for newly-recognized BA(CNAA) courses and to develop Honours courses in certain areas.

Applications invited in: Ceramics, Graphic Design with specialism in Photography, Printed Textiles or Printed Textiles with Weaving, Fine Art (Drawing and Painting), Fine Art (Printmaking with Photography), Fine Art (Sculpture).

Salary range: Senior Lecturer, £10,417 to £13,163 per annum; Lecturer £5,905 to £11,207 per annum.

Assistance with removal expenses.

Details from Secretary, Robert Gordon's Institute of Technology, Schoolhill, Aberdeen AB9 1FR (0224 574511).

LONDON QUEEN ELIZABETH COLLEGE

Department of Mathematics

Applications are invited for a Senior Lecturer in Mathematics. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Mathematics and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Mathematics, Queen Elizabeth College, London W8 7AH.

All advertisements are subject to the conditions of acceptance of Times Newspapers Ltd.

copies of which are available on request.

PROFESSOR AND HEAD OF DEPARTMENT ACCOUNTING AND FINANCE

Readership: Applicants for the post should have high academic qualifications, and appropriate industrial or professional experience and a recognized professional qualification.

The ability to develop research programmes in accordance with the policy of the School is of crucial importance.

Above all, the Head should be able to provide academic leadership to a group of young, well-qualified staff, who have been used to a vigorous programme of course and curriculum development. The Polytechnic awards Professorships to appropriately qualified staff.

Salary: Head of Department, Grade VI, (expected range of salary at September 1, 1980: £16,000 to £18,000 per annum).

Applicants from previous advertisements will be automatically considered.

Further information and form of application from the Assistant Director (Administration), Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Forms to be returned as soon as possible.

TRENT POLYTECHNIC NOTTINGHAM

LEEDS POLYTECHNIC

School of Social Studies

LECTURER II IN SOCIOLOGY

A Sociologist with an interest in teaching Sociology to social administration, social work and non-social science undergraduates.

Closing Date: 11 July 1980.

School of Health and Applied Sciences

LECTURER II IN SPEECH PATHOLOGY AND THERAPEUTICS

A lecturer is required to teach undergraduate students in the three-year full-time BSc course in Speech Therapy. Applicants must be qualified in the above field. The post requires clinical experience. A Graduate qualification would be an advantage.

Indemnity may be given for previous experience in the clinical or academic field.

Closing Date: 21 July 1980.

Salary Scale: £4,951 to £7,784

Details from: The Services Office, Leeds Polytechnic, Calverley Street, Leeds LS1 3HE. Tel: 0532 462455.

SHEFFIELD CITY POLYTECHNIC

DEPARTMENT OF BUILDING

PRINCIPAL LECTURER IN CONSTRUCTION TECHNOLOGY

Applications are invited for a Principal Lecturer in Construction Technology. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Construction Technology and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

Applications should be sent to the Director of Studies, Department of Building, Sheffield City Polytechnic, Sheffield S1 1AB. Closing date 1st July 1980.

PLYMOUTH POLYTECHNIC

Faculty of Technology

Department of Mathematics, Statistics and Computing

RESEARCH ASSISTANT IN RHEOLOGY OR RUBBER TECHNOLOGY

Applications are invited for a Research Assistant in Rheology or Rubber Technology. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Rheology or Rubber Technology and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Mathematics, Statistics and Computing, Plymouth Polytechnic, Plymouth PL4 8AA. Closing date 1st July 1980.

BRISTOL THE POLYTECHNIC

DEPARTMENT OF BUSINESS STUDIES

Salary scale: £4,951 to £7,784 per annum.

Applications are invited for a Senior Lecturer in Business Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Business Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Business Studies, Bristol Polytechnic, Bristol BS1 1JD. Closing date 1st July 1980.

COVENTRY LANCHESTER POLYTECHNIC

DEPARTMENT OF ART

Part-time Lecturer

Applications are invited for a Part-time Lecturer in Art. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Art and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Art, Lanchester Polytechnic, Coventry CV4 7JF. Closing date 1st July 1980.

MANCHESTER THE POLYTECHNIC

DEPARTMENT OF ELECTRICAL ENGINEERING

Principal Lecturer

Applications are invited for a Principal Lecturer in Electrical Engineering. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Electrical Engineering and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Electrical Engineering, Manchester Polytechnic, Manchester M13 9PL. Closing date 1st July 1980.

LEICESTER THE POLYTECHNIC

DEPARTMENT OF MANAGEMENT STUDIES

Senior Lecturer

Applications are invited for a Senior Lecturer in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, Leicester Polytechnic, Leicester LE1 7RH. Closing date 1st July 1980.

LONDON CITY OF LONDON POLYTECHNIC

LECTURER II IN MANAGEMENT STUDIES

Applications are invited for a Lecturer II in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, City of London Polytechnic, London EC3N 3AF. Closing date 1st July 1980.

TRENT POLYTECHNIC NOTTINGHAM

LEICESTER THE POLYTECHNIC

DEPARTMENT OF MANAGEMENT STUDIES

Senior Lecturer

Applications are invited for a Senior Lecturer in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, Leicester Polytechnic, Leicester LE1 7RH. Closing date 1st July 1980.

LONDON CITY OF LONDON POLYTECHNIC

LECTURER II IN MANAGEMENT STUDIES

Applications are invited for a Lecturer II in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, City of London Polytechnic, London EC3N 3AF. Closing date 1st July 1980.

TRENT POLYTECHNIC NOTTINGHAM

LEICESTER THE POLYTECHNIC

DEPARTMENT OF MANAGEMENT STUDIES

Senior Lecturer

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Applications should be sent to the Director of Studies, Department of Management Studies, Leicester Polytechnic, Leicester LE1 7RH. Closing date 1st July 1980.

Polytechnics continued

LECTURER GRADE II/SENIOR LECTURERS

required in the following areas: ACCOUNTING.

Applicants will be required to teach on degree and other professional courses.

BIOCHEMISTRY

Applicants must possess relevant research and/or industrial experience. An interest in secondary Metabolism or process Biochemistry preferred.

BUSINESS STUDIES

Applicants should be able to offer expertise in one or more of the following areas: ORGANISATION STUDIES/PERSONNEL MANAGEMENT INDUSTRIAL ECONOMICS MARKETING INFORMATION SCIENCE/ MANAGEMENT SCIENCE.

Industrial or equivalent experience and/or an interest in European business and/or the ability to develop case study materials or research would be added advantages.

CONTROL ENGINEERING

Applicants must possess an honours degree in either mechanical, production, electrical or control engineering with relevant industrial and/or research experience.

CREATIVE ARTS

A well qualified and practising Artist, possibly with a specialist interest in Ceramics/Sculpture but sympathetic to a multi-disciplinary approach to the teaching of Visual Art in the context of BA(Hons) Creative Arts and BEd(Hons) courses.

FASHION DESIGN

Suitably qualified designer with some experience in knitwear.

LAW

Applicants will be required to teach on degree and other professional courses.

MANAGEMENT DEVELOPMENT AND TRAINING OR GENERAL MANAGEMENT

To assist with a programme of Continuing Professional Education consisting of a range of short courses in specialist areas. Experience of designing and operating management development and training programmes in industry will be an advantage.

MINING ENGINEERING, MINING MECHANICAL OR MINING ELECTRICAL ENGINEERING

A well qualified engineer, preferably Chartered, with a wide knowledge of mining and mining systems required. Teaching experience not essential.

The salary scales are at present under review but the maximum of the Senior Lecturer range at 1 September 1980 is expected to be approximately £11,000 per annum.

Further details and form of application obtainable from The Assistant Director (Administration), Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Applications to be returned as soon as possible.

TRENT POLYTECHNIC NOTTINGHAM

LEICESTER THE POLYTECHNIC

DEPARTMENT OF MANAGEMENT STUDIES

Senior Lecturer

Applications are invited for a Senior Lecturer in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, Leicester Polytechnic, Leicester LE1 7RH. Closing date 1st July 1980.

LONDON CITY OF LONDON POLYTECHNIC

LECTURER II IN MANAGEMENT STUDIES

Applications are invited for a Lecturer II in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, City of London Polytechnic, London EC3N 3AF. Closing date 1st July 1980.

TRENT POLYTECHNIC NOTTINGHAM

LEICESTER THE POLYTECHNIC

DEPARTMENT OF MANAGEMENT STUDIES

Senior Lecturer

Applications are invited for a Senior Lecturer in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, Leicester Polytechnic, Leicester LE1 7RH. Closing date 1st July 1980.

LONDON CITY OF LONDON POLYTECHNIC

LECTURER II IN MANAGEMENT STUDIES

Applications are invited for a Lecturer II in Management Studies. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Management Studies and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Management Studies, City of London Polytechnic, London EC3N 3AF. Closing date 1st July 1980.

BRISTOL THE POLYTECHNIC

DEPARTMENT OF ECONOMICS AND SOCIAL SCIENCES

ASSOCIATE LECTURERS

Salary scale: £4,951 to £7,784 per annum.

Applications are invited for Associate Lecturers in Economics and Social Sciences. The successful applicant will be required to develop and deliver computer programs under development in the Department during the postgraduate period. The applicant should have a first class honours degree in Economics or Social Sciences and be able to assist in the development of computer programs under development in the Department during the postgraduate period.

Applications should be sent to the Director of Studies, Department of Economics and Social Sciences, Bristol Polytechnic, Bristol BS1 1JD. Closing date 1st July 1980.

SUNDERLAND THE POLYTECHNIC

Administration

The Associated Examining Board
for the General Certificate of EducationSecretary General
to the Board

Applications are invited from persons with suitable academic and administrative qualifications and experience for the post of Secretary General to the Board to succeed the present holder of the post, Mr. H. O. Childs, who retires in 1981.

The salary is aligned to the Association of University Teachers scales at the upper professorial level, the current scale being £17,062 by four annual increments of £475 to £18,952 per annum (subject to review at 1st October, 1980).

Further information, together with an application form, may be obtained from the Personnel Manager, The Associated Examining Board, Wellington House, Aldershot, Hampshire GU11 1BQ (Tel: Aldershot 25551), to whom completed forms of application must be returned not later than 1st August, 1980.

LOTHIAN REGIONAL COUNCIL
DEPARTMENT OF EDUCATION
NAPIER COLLEGE OF
COMMERCE AND TECHNOLOGYADMINISTRATIVE ASSISTANTS (Two Posts)
ADMINISTRATIVE ASSISTANT (Finance)

Required in the Department of Administration with particular responsibility for Committee work and certain other Faculty administrative duties. Applicants should possess a degree or equivalent professional qualification, and preferably have had some experience in Local Government or Educational Administration. Responsible for a wide variety of duties in connection with College Finance. Applicants should hold a degree or equivalent qualification. Some experience of financial management within Education or Local Government and/or a part qualification in accounting would be an advantage. Salary for the above post on scale GS 427-£5,073. Application forms may be obtained from the Administrative Officer (Personnel), Napier College of Commerce and Technology, Colinton Road, Edinburgh, EH10 5DT.

Awards

TRAVEL GRANTS
AMERICAN STUDIES

A small number of grants are offered towards the cost of short visits to the United States for students on a year or two academic programme, or subjects within the field of American Studies. Closing date: September 1980.

Further particulars from: Secretary, Travel Grants, British Association of American Studies, 21-23, Riverbank, Dundee.

Colleges of Higher Education

Richmond College

The American International
College of London

Lecturer in
Business
Administration

Richmond College is a rapidly developing international college offering the Associate of Arts degree and the Bachelor of Arts degree in various disciplines. The College has one campus on Richmond Hill and another in Kensington.

Applications are invited for the above post, commencing duties in September, 1980. Candidates should possess a Master's degree in a relevant discipline and substantial teaching experience.

Duties include teaching a broad range of business studies at degree level (with scope for a specialism) and counselling international students. Salary is competitive and based on Burnham, Lecturer II scale.

Applicants are requested to send a full curriculum vitae and the names of two references to:

Robert E. Kuehn,
Academic Dean,
Richmond College,
Queens Road,
Richmond, Surrey.

EALING

COLLEGE OF HIGHER
EDUCATIONLecturer in
Literary Studies

Applicants should have a degree and professional qualifications in literature and be able to teach at degree level. Salary is competitive and based on Burnham, Lecturer II scale. Closing date: July 11, 1980.

ESSEX

COUNTY COUNCIL

CHIEF EXECUTIVE OFFICER OF
EDUCATIONLecturer in
Literary Studies

Applicants should have a degree and professional qualifications in literature and be able to teach at degree level. Salary is competitive and based on Burnham, Lecturer II scale. Closing date: July 11, 1980.

ESSEX

COUNTY COUNCIL

CHIEF EXECUTIVE OFFICER OF
EDUCATIONLecturer in
Literary Studies

Applicants should have a degree and professional qualifications in literature and be able to teach at degree level. Salary is competitive and based on Burnham, Lecturer II scale. Closing date: July 11, 1980.

Harrow College
of Higher Education

FACULTY OF ART AND PHOTOGRAPHY

School of Photography

Applications are invited for this post from experienced persons who are interested in further developing studies in audio-visual communications at degree and diploma level. Applicants will be required to demonstrate their ability to teach the creative use and evaluation of these media, in particular, tape-audio programmes.

FACULTY OF BUSINESS AND MANAGEMENT

School of Business and Social Studies

To join a team concerned with the teaching and administration of Banking courses. Students are prepared for BEC, AIB and the Financial Studies Diploma qualifications. Ability to teach Applied Economics and/or Finance of International Trade would be an advantage.

To join a team of staff concerned with the teaching and administration of BEC Courses (National and Higher National). Applicants should be able to teach at least one of the following subjects: Economics, Accounting, Business Administration. Applicants will be graduates and/or professionally qualified with business and teaching experience.

School of Management and Professional Studies

Required for Senior Secretarial Courses. Preference will be given to applicants with qualifications (graduate and/or professional) enabling them to offer a range of secretarial/business/professional studies. Applications will be particularly welcome from candidates with experience as secretarial linguists or in personnel management.

FACULTY OF SCIENCE AND TECHNOLOGY

School of Engineering

The person appointed will be required to take an active part in both the development and teaching of micro-electronics. The development work will involve hardware, software and curricula material. Applications should be graduates and have experience in further/higher education.

To teach English/Communications and General Studies on a wide range of courses in the Faculty. Applicants should be of graduate status and preferably professionally qualified.

Salary Scales (under review)

Lecturer I	£3,777-£6,498
Lecturer II	£4,851-£7,784
Principal Lecturer	£8,409-£10,805

Application forms are available on request and should be returned to the Principal within fourteen days of the appearance of this advertisement at Harrow College of Higher Education, Northwick Park, Harrow HA1 3TP, Middx., or telephone 01-884 5422, ext. 232.

ROEHAMPTON INSTITUTE
OF HIGHER EDUCATION

A Federation of Daphne Street, Froebel,
Southlands and Whitelands Colleges

The Roehampton Institute seeks to make the following appointments (at DIBBY STUART) in the:

PSYCHOLOGY DEPARTMENT

(1) Visiting Lecturer

Required from late September, for academic year 1980-81, to assist with seminar and tutorial work for 14 days (Monday/Tuesday) per week on an introductory course in Psychology and a course in Educational Psychology. Applicants should be well qualified and have some teaching experience. Fees: £35 per full day and £25 per half day (inclusive).

(2) Demonstrator

Psychology graduate required from mid-September, initially for the academic year 1980-81, to assist on undergraduate courses in Experimental Psychology. Preferably one hour per week (minimum six hours). Salary at rate of £10 per session of three hours.

Applications, in the form of a letter with full particulars, as soon as possible to: Mr. A. Bennett, Assistant Secretary, Roehampton Institute of Higher Education, Froebel Building, Daphne Street, College, Roehampton Lane, London, SW18 5PJ.

It is expected that interviews for both posts will take place between 9-11 July, 1980.

Research Posts

The Hatfield Polytechnic

SCHOOL OF ENGINEERING

Electronic Engineering
Research

Applications are invited from suitably qualified graduates for one SRC Research Studentship and one LEA Research Assistantship to work for higher degrees in any of the following areas:

- (1) Electrical and structural properties of lead telluride thin films grown by molecular beam epitaxy.
- (2) Applications of laser diffraction to the investigation of particulate matter such as biological cells.
- (3) Applications of coding theory to digital communication systems employing cryptography.

Salary for Research Assistant: £3,078-£17,777-£23,498 + £1,177.

Apply as soon as possible to Dr. R. Barrett, Associate Dean (Research), School of Engineering, The Hatfield Polytechnic, P.O. Box 109, Hatfield, Herts.

Personal

IMMEDIATE ADVANCES

£100 in 1980/81
No security bond

REGIONAL TRUST LTD.

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London, W1

Phone: 01-734 0983/01-734 0914

ADVICE ON Material Facilities

Pauline Baker, Manager of
New York City, New York, USA

NEW Academic Studies

Pauline Baker, Manager of
New York City, New York, USA

NEW Academic Studies

Pauline Baker, Manager of
New York City, New York, USA

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New York City, New York, USA

NEW Academic Studies

Pauline Baker, Manager of
New York City, New York, USA

Research Posts continued

SUNDERLAND POLYTECHNIC

Faculty of Engineering

RESEARCH ASSISTANT

Salary: £3,543 to £3,882 per annum

Applications are invited for the post of Research Assistant in the Faculty of Engineering, to take up appointment on the 1st September, 1980. The appointments will initially be made for a period of two years, but may be extended to three years.

- (1) Control of distributed Parameter Systems. (Ref. R.A. 80.1)
- (2) An algorithmic approach to microchip programming. (Ref. R.A. 80.2)
- (3) The effect of stress level on the rate of cavitation erosion. (Ref. R.A. 80.3)
- (4) The prediction of hydraulic transient pressures generated by valves in pipeline systems. (Ref. R.A. 80.4)
- (5) Engineering geological properties of Permian Limestone. (Ref. R.A. 80.5)

Faculty of Humanities

Department of Languages and Cultures

RESEARCH ASSISTANT IN
COMMUNICATION STUDIES

Salary: £3,543 to £3,882 per annum

Applications are invited for the post of Research Assistant to support a project which involves a study of socio-technological and social aspects of recent developments in British broadcasting technology. The work will have a technological emphasis, but will also be related to wider issues in social theory. The person appointed will be required to register for a Higher Degree of the C.A.A. An application form and further particulars may be obtained from the Personnel Officer, Sunderland Polytechnic, Langham Tower, Bridge Road, Sunderland, S62 7EE. Closing date 10th July, 1980.

SOCIAL SCIENCE RESEARCH COUNCIL

Centre for Socio-Legal Studies, Wolfson College, Oxford

Professorial Level Social
Science Appointment

Applications are invited for a senior social science post at this Centre. Applicants should be interested in developing research in the relationship between any of the social sciences and the law and legal institutions. Although interests in economics may be preferred, the appointment will be open to any discipline. The postholder may involve designation as Joint Director with Mr. D. R. Harris. In either case the person appointed to this post would enjoy within the University of Oxford the normal security of tenure for academic staff until the age of 65, regardless of the life of the Centre. There is a non-contributory pension scheme. The appointee may be offered a Fellowship of Wolfson College.

Further particulars of the post may be obtained from the Secretary of the Council, Dr. C. S. Smith, at 1 Temple Avenue, London EC4Y 0BD. Applications, including a full curriculum vitae, should reach him by 30 September, 1980.

UNIVERSITY
college of
swansea

Research Assistant

Applications are invited for a post of Research Assistant in the Department of Statistics, to take up appointment on the 1st September, 1980. The post is primarily concerned with the analysis of data from a variety of sources, including surveying and writing reports. The postholder will also be expected to assist in the development of the Department's statistical consultancy work. Applicants should have a degree in Statistics or a related discipline, and be able to undertake statistical work. Further particulars may be obtained from the Department of Statistics, University of Swansea, Singleton Park, Swansea, SA2 8PP. Closing date 10th July, 1980.

LEEDS

THE UNIVERSITY

SCHOOL OF ENGLISH

O.U.P. LEXICAL RESEARCH UNIT

Applications are invited for the post of Research Assistant in the School of English, to take up appointment on the 1st September, 1980. The post is primarily concerned with the analysis of data from a variety of sources, including surveying and writing reports. The postholder will also be expected to assist in the development of the Department's statistical consultancy work. Applicants should have a degree in Statistics or a related discipline, and be able to undertake statistical work. Further particulars may be obtained from the Department of Statistics, University of Swansea, Singleton Park, Swansea, SA2 8PP. Closing date 10th July, 1980.

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NEWCASTLE UPON TYNE

THE UNIVERSITY

RESEARCH ASSOCIATE

LEADS DYNAMICS IN
TOWED AND TRIMMED
SYSTEMS

Applications are invited from suitably qualified persons for the post of Research Associate in the Department of Mechanical Engineering, to take up appointment on the 1st September, 1980. The post is primarily concerned with the analysis of data from a variety of sources, including surveying and writing reports. The postholder will also be expected to assist in the development of the Department's statistical consultancy work. Applicants should have a degree in Statistics or a related discipline, and be able to undertake statistical work. Further particulars may be obtained from the Department of Statistics, University of Swansea, Singleton Park, Swansea, SA2 8PP. Closing date 10th July, 1980.

MANCHESTER

THE POLYTECHNIC

INSTITUTE OF ADVANCED
STUDIES

RESEARCH ASSISTANT

Applications are invited from suitably qualified persons for the post of Research Assistant in the Institute of Advanced Studies, to take up appointment on the 1st September, 1980. The post is primarily concerned with the analysis of data from a variety of sources, including surveying and writing reports. The postholder will also be expected to assist in the development of the Department's statistical consultancy work. Applicants should have a degree in Statistics or a related discipline, and be able to undertake statistical work. Further particulars may be obtained from the Department of Statistics, University of Swansea, Singleton Park, Swansea, SA2 8PP. Closing date 10th July, 1980.

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MANCHESTER

much to combat the lights. And whatever you do—remember, old Stanislavsky—keep it natural!")

What Finniston's report sought to do

Sociological research
Sir,—Whilst I wholeheartedly en-

Yours sincerely,
IAN GLOVER,
Lecturer, Dundee College of Tech-
nology.

Yours faithfully,
Professor J. E. FLOOD
University of Aston.

Sir,—On behalf of Imperial College Union Anti-Apartheid Group we would like to refute the suggestion of your article "Imperial Students endorse South Africans' attendance" (June 20) that there exists any union policy endorsing the presence of South African students on the MSc course in nuclear technology at Imperial College.

Student loans

Oxford and Cambridge are endlessly fascinating—academic powerhouses which still dominate the values of higher education as a whole, and provide a surprisingly large proportion of its teachers and researchers; ancient institutions, even monuments, that can be compared to the monarchy, the cathedrals of England, or Stratford; spinners of webs of political and professional interest which still entangle modern British society.

and little has happened since then to inspire confidence for the future. Despite fundamental changes in entry standards and a subsequent

The deadlock over the composition of the Advisory Council for the Supply and Education of Teachers is merely the latest in the depressing series of events which seem to dog national planning in teacher education. It is unfortunate that a wrangle over the size of the National Union of Teachers' representation should jeopardize the reappearance of a body so recently reprieved by the Government. In the absence of

and little has happened since then to inspire confidence for the future. Despite fundamental changes in entry standards and a subsequent

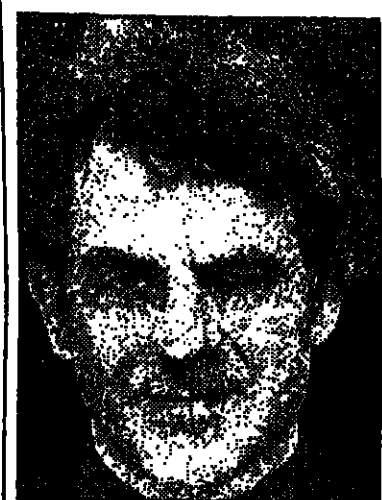
Britain's local education authorities seem bent on destroying what little goodwill remains for them in the polytechnics. The DES has already signalled that their latest initiative, a request for substantial new powers to intervene in the internal management of their institutions (*THESE* May 23), is unlikely to meet with approval. What it will do, however, is call into question once again the role of

only the instruments of government for polytechnics drawn up by education authorities. The C.E.A. believes that these instruments, which lay down the respective powers of the authority, principal, academic board and governing body, have ceded too much power to the institutions and made it impossible for education committees to ensure the efficient

There has also been the recent attempt by the National Association of Teachers in Further and Higher Education in tandem with the Committee of Director of Polytechnics

Whatever the feelings of the Roman Catholic minority in Ulster towards the Chilver committee's

Joseph and his technicolor straitjacket



Steven Lukes

Sir Keith has written that freedom "... consists in the absence of external coercion and no man is unfree unless other people intentionally use coercion to prevent him from doing something which he is able and willing to do and which could be done without encroaching on the freedom of others".

Sir Keith here faithfully follows the opinion of his intellectual master Friedrich von Hayek, for whom liberty or freedom denotes "the condition of men in which coercion of some by others is reduced as much as possible in society"—a "state in which a man is not subject to coercion by the arbitrary will of another or others".

From this Sir Keith concludes: that a "person who is unable to do something which he would like to do may be unfree but is not necessarily so." If "the reason is that some other person or group of persons is intentionally preventing him from doing it, then he is to that extent unfree. But he is not unfree if he is not capable of doing it."

achieving it because of some lack of capacity in himself". Poverty, according to Sir Keith, "... is one kind of personal incapacity. But it is not coercion. The possessor of the money one would like is not the same thing as liberty simply because both of them are desirable. How much money we have is one of the factors which determines the choices open to us.

Liberty means that we, not others, choose between these alternatives. A person who cannot afford to buy food may well have a justifiable grievance which ought to be rectified politically, but it would be misleading to describe his grievance as lack of freedom. Or as I believe **Arnold** observed, the poor are like the rich are free to sleep under

Sir Ian, by contrast, allows that the "justification of state help and welfare is that it should enlarge freedom by diminishing poverty and by increasing security". On the other hand, he sees such paternalist state action as having gone too far, penning the children, so to speak, rather than the father: "Too often are children denied freedom and

now, it diminishes freedom and merely increases bureaucracy." Although he does not offer an abstract definition of freedom, preferring like Winston Churchill to indicate various practical tests for its existence or absence, he is clear in his opposition to what we may call the Hayek-Joseph view. Hayek's *The Constitution of Liberty*, he writes, "contains much that is congenial to

On his left flank, however, Sir Isaac makes plain his objection to what

he ta-
tarians.
crats: be-
be impos-
power," he h-
any objective c-
threat to free-
Crosland was wrong,
you can have equality
and Douglas Jay that
have freedom without eq-
here Sir Ian like Sir Kaln,
the famous words of Sir I.
Berlin: "Everything is what it
liberty is liberty, not equality o-
fairness or justice or human
happiness or a quiet conscience."

Outside this charmed knightly circle, however, wider notions of freedom prevail. As Sir Ian observes, social democrats take further his own Tory thought that poverty and insecurity are constraints upon freedom, shedding however its paternalist assumptions. The deprivations associated with unequal life chances—in income, wealth, housing, education, job op-

portunities and so on—are for them deprivations of freedom. Sir Keith scorns Mr Callaghan's claim that liberty had been denied when he was a young man by the fact that he could not afford to go to university. Such a claim, he thinks, would only be valid if it could be "shown that Mr Callaghan's poverty was the result of economic arrangements contrived by other men in their own interest".

Social Democrats, in general, reject the austere Hayek-Joseph doctrine that the only constraints on freedom are cases of intentional, arbitrary and external coercion to prevent an individual doing what he is able and willing to do. They allow that such constraints may be unintended, and quite routine rather than arbitrary—part of the normal functioning of a stratified society, marked by structured inequalities of class, race and region,

Others go further and observe that constraints on liberty need not always be "external" to individuals, nor indeed experienced by them as coercive: that people may be rendered unfree by their lack of knowledge or skills or by the narrowness of their horizons, and they may be bamboozled by mystifying beliefs which preserve a status quo

that works against their interests. Or again the powerless may accept their situation as natural just because they see no prospect of changing it. In these ways, for example, both the women's movement in the West and the black consciousness movement in South Africa can be said to have enhanced people's freedom and in doing so they show

how a further feature of the Hayek-Joseph doctrine is unduly narrow—namely, its insistence that constraints on freedom only prevent an individual from doing what he is able and willing to do. Often freedom may be enhanced by enabling people to want what they previously neither envisaged nor desired.

Finally, confining talk of freedom to the "individual", considered in terms of his or her wants at any given time, is unacceptable to all those who see freedom as involving autonomy and self-direction.

In political contexts, the pursuit of such freedom naturally takes the form of democratic struggles. The case for workers' control, say, and for independence and libera-

The strategy of defining liberty very narrowly has a double rationale. Sometimes, it is argued for on academic grounds, as though a narrow definition made for clarity of thought. But, as I began by saying, defining freedom is, no more academic exercise and, narrow-

nance is not the same as clarity. The second, deeper, political reason for narrowly restricting the definition of freedom is, from one point of view, highly creditable: namely, as a protection against the terrible acts of tyranny and brutality that have been performed in the name of liberty, forcing individuals to be free in the face of their own or national survival.

name of their real or rational selves or of the classes, or races, or nations of which they are members. But this strategy is misdirected and self-defeating. Misdirected because the problem lies with the perversions and abuses to which widespread ideals of liberty have been subjected, not with those ideals themselves. And self-defeating because it upholds a narrow and impoverished

...a narrow and impoverished
...ideal of freedom that fails to take
...account of much that people fight
...for and cherish as part of their
...liberties. Everything is indeed what
...it is, and liberty is more complex
...and diverse than dreamt of in the
...philosophies of Mrs Thatcher's
...knights.

Laurie Taylor



"Could we stop the fanfare please. Thank you. Now, ducks, just a few comments on the last run-down. The procession looked fine, far less ragged than in the previous rehearsal. But I don't think there's any absolute need for the chancellor and vice-chancellor to walk in step. It gives a rather inappropriate military air to the proceedings especially with the chancellor having that rather high-stepping style. "Let me see. Oh yes. Is the professor of philosophy here? Very nice, professor. A good solemn walk, and I particularly liked that new bit of business with the gown—really got it to flare out behind you as you walked across the stage didn't you? But keep it like that. Anything more would be a bit over the top. You know, a little too Isadora Duncan. Just one teeny point. Will you be wearing that piece of fur on the day. You will? No. No objection. But I think a little lower on the head might be preferable. The way it hangs at the moment gives you a certain—how shall I put it—a certain Davy Crockett look. Yes, that's much better."

"Mace bearer? Yes, well done. Nice firm stride, all very manly, and mace well displayed—but quite hoarsely—and I hope you'll take this in the spirit in which it is meant—your interesting idea of throwing the mace in the air and catching it before placing it on the ceremonial table just isn't working. So we'll cut that. O.K.?"

"Well shall we go from the end of the degree-giving. Top of page 32. Applause from audience. Dr Glickstein walks up to mace. Bends. Kisses it—and cue."

"And finally, My Lord and Chancellor, I beseech you to introduce (how) for the degree of Bachelor of Science in Hotel Catering with Subsidiary Ethics. Sally Zumpinsky, (how)."

(Good, keep it moving boys and girls. Not too many bows. Doctor. Respect not obsequiousness. Right, Chancellor. And cue!)

"May this degree of Bachelor of Science in Hotel Catering with Subsidiary Ethics which I now grant you be a fertile seed-bed for the years of life which now attend your coming." (hands scrawl)

"Good. Very medieval. The parents will love it. Chancellor—per-haps upstage just a bit so, we get a better sight-line on the grime. Right. Now, Sally."

"My Lord and Chancellor. With my hands I take this scroll and with my mind I embrace your wisdom." (Curles and exits right)

"Sally. Don't wave to the audience, love. It gives quite the wrong impression. On we go. Watch the timing here. Doctor. Glickstein. The roll of degrees is terminated. My Lord and Chancellor, I beg, leave to withdraw. (bows)

"Such leave is granted readily. Your task is done. Go in peace." (Wave of hand)

"A gentler wave I think, Chancellor. Your waving goodbye not sounding hurt to the line."

"Blessings rain upon you and your professional court. The day draws fully to a close. It is meet that I now retire." (kisses mace)

"Well, don't sweeties. Coming to gether. Well. Good. Last tomorrow afternoon. Have a good degree-day. Don't overdo the 3 a.m. 9. Just a touch to combat the lights. And whatever you do—remember old Statistavsky—keep it natural!"

LETTERS TO THE EDITOR

What Finniston's report sought to do

Sir—John Mace's article on Finniston (*THES*, June 1) contained some of the most liberal-minded and potentially dangerous comments published in this data.

The Finniston report seeks a general upgrading of engineering and engineering, both in manufacturing and in society in general, to bring us into line with more successful countries. Its authors want to achieve this without damaging our strong traditions of individualism and local autonomy, which other countries sensibly often want to copy.

So the committee steered clear of advocating fully centralised control of engineering education as practised in some foreign countries; instead it proposed that a typically British quango be set up. In the context of such issues, introduction of economists' talk of monopolies is largely irrelevant. In any case the report explicitly avoided advocating comprehensive statutory licensing of engineers or anything approaching it.

John Mace should know that the Finniston inquiry was set up after a considerable amount of Department of Industry-centred research, much of it published, into all aspects of Britain's economic performance. Major parts of it were conducted by economists, members of the Government economic service working in the Department of Industry or academic consultants, over the last part of a decade.

They began by examining, comprehensively, data on Britain's poor growth performance. They conducted, with SSRC help, a thorough study of the pay, status, education, careers and collective organisation of engineers in Western Europe. Indeed they examined virtually all relevant sources of evidence on pay of this, the data quoted in the Finniston report was only the tip of a very big iceberg.

There were numerous investigations, inside and outside the DoI, into the economic backgrounds, attitudes to work, collective organisation, and the careers and tasks of all types of managerial level employee, in manufacturing and elsewhere, in Britain and abroad. Relations over productivity, investment, and the economic and industrial relations were all considered, along with a wide range of writings on political, economic, educational and social history.

The majority of the researchers and consultants involved were probably economists by background; the bulk of the material that they covered soon convinced them of the real and culture-bound nature of many ostensibly relevant types of economic (and sociological) analysis. Much of it, for example, did not know the difference between an accountant and a scientist.

It also became apparent, partly after discussions with successful foreign engineers, that English-language social science had systematically

misunderstood the nature of technical change in particular and of engineering in general, in ways that could easily be attributed to idiosyncrasies of our political and educational history.

The consultants and academics who helped the DoI included psychologists, sociologists, economic historians, professors of engineering, management, and organization, and at least one "ordinary" historian. So it is not true for John Mace to say that economists were not involved: rather the economists whose efforts underpinned Finniston were led, by the depth and breadth of the issues and evidence confronting them, to face the limitations of their discipline.

More specifically, John Mace is also wrong to accuse the Finniston committee of being unaware of the minefields, which past talk of "needs" demand and "shortages" has led analysts to suggest that he looks at page 44 of the report. What he seems not to appreciate is that it is first and foremost a document intended to stimulate constructive thought about the need to modernise and broaden the composition and the skills of our political, economic, and educational elites.

It does not suggest support for belief in any simple kind of relationship between occupational/educational structure and GNP of the type that Mace refers to. It seeks to persuade employers, especially, but not only those in manufacturing, to put more effort into the training of engineers, and to reward them better. It assumes that employers may be educated, not that they are, for the naïveté imputed to Finniston about substitution between engineers and others, it is John Mace who is being naïve (and inconsistent).

The whole point, as I have suggested, is that Mace refers to. It is to encourage people who understand engineering, who in many cases are significantly more broadly educated as engineers than our so-called "arts" or "science" graduates, whereas in earlier times they were run by landowners, priests, and clerics.

Bad economics, concerned to dispute the minutiae of its archaic generalizations, is perhaps inherently unable to inform the (modern) world of what is going on. In *The Open University*, Paul Johnson referred to it as a product of latter-day "schoolism". We need to make ourselves as efficient and creative in all aspects of manufacturing as we have been in farming, soldiering, and the performing arts, and scholarship.

Yours sincerely,
IAN GLOVER,
Lecturer, Dundee College of Technology.

Sociological research

Sir—Whilst I wholeheartedly endorse the views of Professor Baric on the importance of supposedly "abstract" anthropological research (*THES* June 6), I would not want your readers to gain the impression that sociological research is never of direct practical relevance, nor that problems do not arise when it is.

I recently completed doctoral research on some sociological aspects of prison governor training, which was not only supported by the DoI, but was actually funded entirely by them. The research related, and the thesis I discussed, several issues which I believe are not only of sociological but also of practical importance to the prison service.

Yet after submitting my 500-page thesis, together with a short summary pointing to the policy implications of my conclusions, and further offering to discuss all aspects of the research, I received a letter from the DoI saying that for this thesis and living the whole thing, no make it publicly available.

So much for "relevance". In future I am tempted to stick to "abstract" research. It must be less relevant.

Dr A. J. Wedderburn
University of Reading

OU course material

Sir—It would be unfortunate if your readers were given the impression that most Open University correspondence material is produced in anything like the way described by Peter Wason and Wendy Stainton-Rogers in their article *The art of course writing* (*THES*, May 23).

I would hope, and expect that most of my colleagues did not write in a different style when they are writing for Open University students and when they are writing for other academic colleagues. Clarity should be the aim in both cases. The only necessary difference is in the nature of the knowledge assumed in the reader.

Because the Open University offers a wide range of courses, the Open University academic cannot usually assume any specific body of prior knowledge of the subject among his students. Some students will have a lot of background knowledge, others will have none. The Open University should make nothing for granted, but should make his own assumptions clear, he should state what knowledge he is assuming as part of the student's, and he should summarise what he expects a student to learn from a particular course.

The Open University should specify the educational objectives of the course.

Sir—How nice to have an article (*THES*, June 13) denigrating the Finniston report on the engineering profession, written by a lecturer in economics at an institute of education! Mr Mace's explanations of elementary economics gave us some useful revision. However, like other economists, he discusses an industry without considering the nature of its products. He ignores the "engineering dimension" and has missed the main point of the report.

Mr Mace complains that the report does not define an "engineer", although the authors "write as though they do have a precise notion of what an engineer is". This is hardly surprising, since an international agreed description has been accepted for many years. Would he explain if a report on the medical profession did not waste space on defining a doctor?

Mr Mace discusses whether or not there is a shortage of engineers on the basis of statistics from the present engineering industry. He ignores the fact that much of the industry is failing in the world market, largely because of inferior products and inefficient manufacturing. To correct this, more (and better) people are needed to design new products and manufacturing processes. These people are engineers.

He also gives us a short dissertation on the substitution of labour. He claims that its possibility is proved because people can move into engineering through different educational routes. However, this merely confirms that there is more than one educational route into the profession. Of course, such substitution of labour is possible. However, he does not discuss the limits within which this is desirable, or whether these have been exceeded. For example, is an accountant the best person to make decisions on investing in new production plant or introducing a new product using modern technology?

Finally, he states that the Finniston report recommends the creation of a monopoly by licensing engineers. It does not, except in a few special cases; it recommends registration, which does not confer a monopoly. He also claims that no similar arrangements exist in the USA or Germany. However, registration does exist in most states in the USA and few German organizations would employ as a professional engineer anybody who is not a Dipl.-Ing. A more careful reading of the report would have made these matters clear to Mr Mace.

Mr Mace complains that the Finniston report is "polemical". It needs to be polemical if it is to provoke action.
Yours faithfully,
Professor J. E. FLOOD,
University of Aston.

Imperial and apartheid

Sir—On behalf of Imperial College Anti-Apartheid Group, I would like to refute the suggestion of your article "Imperial Students' dance" (June 20) that there was any union policy endorsing the presence of South African students in the MSC course in nuclear technology at Imperial College.

The meeting referred to in your article was a meeting of the Council which by that time had been running for over four hours. A number of student council members had left the meeting because it was not known that this was voting on the agenda. The meeting was not intended to pass a motion calling for students from countries who had refused to sign the Nuclear Non-Proliferation Treaty to be allowed on the course. The quote from Malcolm Bradbury taken out of context gave the impression that the meeting stated some policy, which was not the case.

Earlier in the meeting a large majority had voted not to allow any union facilities to be used by South African rowing team. This had been a considerable victory for those committed to action against apartheid at the college. A few months ago a rowing team from Imperial College toured South Africa and IC Boat Club had subsequently sought union permission to lend their boats to South African team visiting Britain.

Imperial College has many links with South Africa particularly due to departments of the college on the Royal School of Mines. Many engineering and geology students are particularly keen to work in South Africa and the Anti-Apartheid Group has, therefore, a very difficult task to seek to make these students understand that South Africa is not just a country in the sun that pays high wages to skilled personnel.

Our job is not aided by misrepresentation of a small setback in our attempt to get a firm union stand against links with apartheid. We will continue to work for union policy to be passed against the presence of South African students being trained in the field of nuclear technology. We are also organizing a protest against the presence of a South African team at the Henley Regatta on July 3 at which we would welcome the participation of any *THES* readers.

Yours faithfully,
MALCOLM BRAIN,
PETE STEVENS,
Imperial College.

Student loans

Sir—As a long-standing (founding) member of the "fringe groups" of UK "eccentricities" I write to say that your editorial (June 6), on this matter, is unworthy of a journal of your purported detachment.

There is no evidence that loan schemes have discouraged "working class" students even in the case class" students potentially deterred by arrangements (fixed-period, fixed-repayment schemes). There is evidence that educational attainment and expected lifetime earnings are positively correlated.

You reject the first piece of evidence and no convincing reason is given. You dismiss the considerable literature on the second as "retical points". Sir, you continue to prejudice against loans by showing Or is it ignorance of your staff?

Yours sincerely,
JOHN SEEMAN,
Institute of Social and Economic Research,
University of York.

Sir—Like Ruth Baile (*THES* June 13) I too would have been glad of a government loan two years ago when I completed a one year MA which I was granted. However, the government's loan scheme was not as generous as it once was.

It is a pity that the government's loan scheme is not as generous as it once was. It is a pity that the government's loan scheme is not as generous as it once was.

Yours faithfully,
PETER REYNOLDS,
18th Cheltenham Road,
Leeds.



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The condition of Oxbridge

Oxford and Cambridge are endlessly fascinating—academic powerhouses which still dominate the values of higher education as a whole, and provide a surprisingly large proportion of its teachers and researchers; ancient institutions, even monuments, that can be compared to the cathedrals of England, or Stratford; splinters of webs of political and professional interest which will entangle modern British society.

Most interest outside higher education is naturally concentrated on these two last aspects of Oxford and Cambridge. This interest is not necessarily trivial because it is so hardy accurate to consider them as merely universities. In spite of the efforts of Kingsley Amis (for redneck), Malcolm Bradbury (for redneck), and more recently the cartoonist Tony Simmons (for the polytechnics), the "match-the-streets" image of higher education can never be quite rid of those dreaming medieval spires which maintain their seductive hold over its imagination.

Power, too, is endlessly fascinating. Oxford and Cambridge graduates still occupy some of the most powerful positions in British society—certainly in politics, administration and many of the professions, less so in commerce, hardly at

all in manufacturing industry. An Oxbridge degree is still a common passport for the "scholarship boy" (or his 1980s equivalent who will not so certainly be male) to be admitted to the ruling elite, although comprehensive reorganisation and the disappearance of the grammar schools may modify this traditional and very peculiarly British form of upward social mobility.

Yet the first aspect of Oxford and Cambridge's hegemony is the most important even if it is perhaps the least romantic. Professor Halsey (page 12) shows just how little the academic dominance of these two universities has been affected by the great expansion of higher education since the end of the war, and particularly since 1963. Although the "dons", as Professor Halsey calls them, are now a small minority of all university teachers, they continue to be content, self-confident, and highly esteemed by their colleagues in other universities to its reserve.

The LSE (in the social sciences), Imperial College (in applied science and engineering), the two Manchester universities, and perhaps Edinburgh, may have begun to challenge this dominance. But none can really challenge Oxford's place as the preeminent excellent university in traditional arts subjects, nor of Cambridge in

the pure sciences. This pre-eminence of Oxbridge is reinforced by the important fact that so many teachers in higher education (32 per cent in universities and over 10 per cent in polytechnics) are Oxbridge graduates, many of them addicted to Oxbridge values.

The one question mark that hovers today over the success of Oxford and Cambridge in maintaining their dominance, and their excellence, over so many centuries concerns undergraduate education. The two universities are perhaps less able to come to terms with the great changes in secondary education, in structure and style, which will in the future have so fundamental an effect on undergraduate education. The educational traditions and the personal networks on which they relied in the past for a supply of good students will become less apt and less effective in the new comprehensive age.

Many colleges, of course, are aware of this danger and are anxious to open up new territory, academic and geographical. But the danger still remains. The threat to Oxbridge's dominance does not come so much from the challenge of other universities to its reserve excellence, but more from a decline of its undergraduate education to academic, and social, irrelevance.

A wrangle teachers can ill afford

The deadlock over the composition of the Advisory Council for the Supply and Education of Teachers is merely the latest in the depressing series of events which seem to be paralysing planning in teacher education. It is unfortunate that the wrangle over the size of the National Union of Teachers' representation should jeopardise the reappearance of a body so recently revived by the Government. In the absence of similar institutions involved in ill-afford to pass up an opportunity to examine the many common problems in an influential forum.

Throughout the post-war era teacher training has suffered from hand to mouth, expanding and contracting in turn with the minimum of notice. The last major review of teacher education numbers in 1977 followed this pattern exactly and little has happened since then to inspire confidence for the future. Despite fundamental changes in entry standards and a subsequent slump in student recruitment, no picture has emerged of the shape or size of the system in the coming decade.

ACSET, the only body traditionally concerned with numbers in teacher training, now to be charged with consideration of the curriculum as well, has already been dormant

for too long. Like the rest of higher education, teacher training has muddled along but no attempt has been made to fill the policy vacuum in this most vulnerable of areas. Whether the final outcome of this controversy is a revamped ACSET, more in the likeness of the NUT, or even a completely new body, the impasse must not be used as an excuse for continued inaction.

Many would have preferred to see the creation of a Joint Council for the Education of Teachers which it was felt would offer a greater voice and say to teachers at the grassroots level, ACSET having been criticized previously for its heavy reliance on local authority and Department of Education representation.

There has also been the recent attempt by the National Association of Teachers in Further and Higher Education in tandem with the Committee of Directors of Polytechnics and others to set up a public sector body to coordinate teacher education. Both of course could easily exist as subsidiaries or in parallel with ACSET.

There are both some immediate and long term issues with which only a body such as ACSET could come to grips. A leading issue is

the present mismatch and shortages of teachers in maths and science subjects. Others are the rationalization of initial teacher training provision, the problems of entry to the teaching profession of older and more experienced people and members of ethnic minorities. Moreover there are some pending documents such as the report of the working group on the BED and those of the subcommittee on the training of teachers for further education and on INSET.

With the birthrate looking likely to reverse itself yet again, it is vital that the system is capable of reacting with the minimum trauma to a relatively swift increase in demand. The range of institutions involved in both initial and in-service training could hardly be wider, making the need for a structured look at the system more urgent than ever.

Whatever the feelings of the Roman Catholic minority in Ulster towards the Chilver committee's recommendations for teacher education in the province, at least there is a comprehensive review has been carried out. England and Wales have a clear framework within which to choose between these alternatives. A person who cannot afford to buy food may well have a justifiable grievance which ought to be rectified politically, but it would be misleading to describe his grievance as a lack of freedom. Or, as I believe, as the bridges of Paris.

Sir Ian, by contrast, allows that a "justification of state help and welfare is that it should enlarge freedom by diminishing poverty and by increasing security". On the other hand, he sees such paternalistic state action as having gone too far, formalizing a claim to liberty, for rather than the father: "Too often, now, it diminishes freedom and more increases bureaucracy". Although he does not offer an abstract definition of freedom, preferring like Winston Churchill to indicate various practical tests for its existence or absence, he is clear in his opposition to what we may call the Hayek-Joseph view. Hayek's *The Constitution of Liberty*, he writes, "contains much that is congenial to Conservatives yet it clearly reveals the great gulf between Conservatism and Liberalism. Reading the book, one almost feels that Liberalism is Conservatism dogmatized, and therefore distorted".

On his left flank, however, Sir Ian makes plain his objection to what he takes to be the "obnoxious egalitarianism" of the Social Democrats: "Liberty can only be imposed by force, and the only objective standard of freedom is the threat to freedom in an obvious Crossland was wrong to think that you can have equality without liberty and Douglas Jay that you cannot have freedom without equality. And here Sir Ian, like Sir Keith, and the famous words of Sir Isaiah Berlin: "Everything is what it is. Liberty is liberty, not equality or fairness or justice or human happiness or a quiet conscience."

Outside this charmed knightly circle, however, wider notions of freedom prevail. As Sir Ian declares, social democrats take further his own Tory thought that poverty and insecurity are constraints upon freedom, sheding however its paternalist assumptions. The deprivations associated with unequal life chances—in income, wealth, housing, education, job opportunities and so on—are for them deprivations of freedom. Sir Keith scorns Mr Callaghan's claim that liberty had been denied when he was a young man by the fact that he found not access to the university. Such a claim, he thinks, would only be valid if it could be "shown that Mr Callaghan's poverty was the result of economic arrangements contrived by other men in their own interest."

Social Democrats, in general, reject the austere Hayek-Joseph doctrine that the only constraints on freedom are cases of intentional, arbitrary and external coercion to prevent an individual doing what he is able and willing to do. They allow that such constraints may be unintended, but they are routine rather than arbitrary—part of the normal functioning of a stratified society, marked by structured inequalities of class, race and region.

Others go further and observe that constraints on liberty need not always be "external" to individuals, nor indeed experienced by them as coercive: that people may be rendered unfree by their lack of knowledge or skills or by the narrowness of their horizons, and they may be bamboozled by mystifying beliefs which preserve a status quo that works against their interests. Or again the powerless may accept their situation as natural just because they see no prospect of changing it. In these ways, for example, both the women's movement in the West and the black consciousness movement in South Africa can be said to have enhanced people's freedom and in doing so they show how a further feature of the Hayek-Joseph doctrine is usually narrow-jammy, its insistence that constraints on freedom only prevent an individual from doing what he is able and willing to do. Often freedom may be enhanced by the removal of what was previously "neither envisaged nor desired."

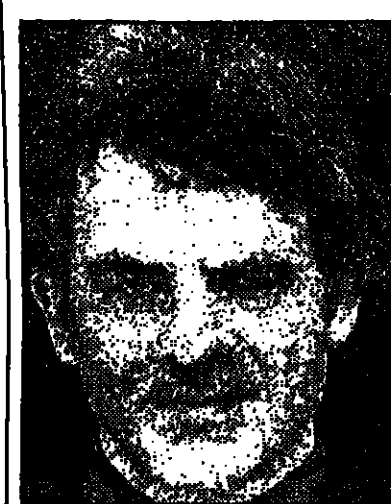
Finally, confining talk of freedom to the "individual", considered in terms of his or her wants at any given time, is unacceptable to all those who see freedom as involving autonomy and self-direction.

In political contexts, the pursuit of such freedom naturally takes the form of democratic struggles. The case for workers' control, say, and for indigenous and liberation movements appeals to freedom in this sense.

The strategy of defining liberty very narrowly has a double rationale. Sometimes, it is argued for on academic grounds, as though a narrow definition made for clarity of thought. But, as I began by saying, defining freedom in no more academic exercise and narrowness is not the same as clarity.

The second, deeper, political reason for narrowly restricting the definition of freedom is from one point of view, highly creditable: namely, as a protection against the terrible acts of tyranny and brutality that have been performed in the name of liberty, for individuals to be free the person of their real or rational selves or of the classes, or race or nation of which they are members. But this strategy is misdirected because self-defeating. Misdirected because the problem lies with the person, and abuses to which wider ideals of liberty have been subject, not with those who demand them. And self-defeating because it upholds a narrow and impoverished ideal of freedom that is in no way the great gift which people have fought and died for as part of their liberties. Everything is indeed what it is, and liberty is more complex and diverse than freedom of this philosophical of Sir Isaiah's knight.

Joseph and his technicolor straitjacket



Steven Lukes

Defining "liberty" is no mere academic exercise. The argument about where its boundaries lie has long been at the heart of British politics. At present, for instance, it divides two major bodies of opinion within the Conservative Party, as represented by the two intellectual knights of Mrs Thatcher's (remarkably bookish) government, Sir Keith Joseph and Sir Ian Gilmour.

Sir Keith has written that freedom "... consists in the absence of external coercion and no man is unfree unless other people intentionally use coercion to prevent him from doing something which he is able and willing to do and which could be done without encroaching on the freedom of others."

Sir Keith here faithfully follows the opinion of his intellectual master Friedrich von Hayek, for whom liberty or freedom denotes "that condition of men in which coercion of some by others is reduced as much as possible in society—a state in which a man is not subject to coercion by the arbitrary will of another or others."

From this Sir Keith concludes that a "person who is unable to do something which he would like to do may be unfree but is not necessarily so." If "the reason is that some other person or group of persons is intentionally preventing him from doing it, then he is at that extent unfree. But he is not unfree if he is not capable of achieving it because of some lack of capacity in himself." Poverty, according to Sir Keith, "... is one kind of personal incapacity. But it is not coercion. The possession of money does not work in itself, not the same thing as liberty, simply because both of them are desirable. How much money we have is one of the factors which determines the choices open to us. Liberty means that we choose between these alternatives. A person who cannot afford to buy food may well have a justifiable grievance which ought to be rectified politically, but it would be misleading to describe his grievance as a lack of freedom. Or, as I believe, as the bridges of Paris."

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Sussex forced to consider losing 60 staff posts

by Ngalo Crequer

The damage of the Government's projected spending cuts could lead to Sussex University restricting all its non-academic services, selling some short courses to those who could afford them and losing up to 60 staff posts over four years.

In a discussion paper prepared by a group chaired by Vice-Chancellor Sir Denis Wilkinson, the full effect of Sussex being forced to find £1m to £2m is spelt out.

The interim paper makes no recommendations but outlines the future shape of the university if the worst financial damage materializes.

Both senate and council have reserved the report for further consideration. The local Association of University Teachers has rejected it unanimously.

The report lists possible damage to the university and exposes the potentially disastrous Government financial policy and the effect of the overseas student fees changes. The group looked first at a series of marginal savings which could be made. These included selling academic services, such as short courses, consultancies for industry and the professions to those who could afford to pay for them, changes in fire regulations, and closing all buildings except one after office hours.

A public appeal for funds was given low priority because "we have to acknowledge that the general public's view of the value and benefit of universities has a clear influence on the minds of potential donors", says the report.

One model considered was "the simple removal of everything non-academic" which would include

discontinuing arts centre catering facilities and children's facilities if money could not be found elsewhere. The accommodation service could be restricted and sports facilities cut back. The health service and counselling agencies could be limited and savings could be made by a reduction in cleaning and maintenance and portering.

The report says that the impact of the cuts would be "unacceptably severe". The effect on both the intellectual functions is narrowly conceived and on the broader atmosphere of the university would be disastrous.

Cuts would only save about 40 per cent of the amount needed. "The inference that something like 60 per cent would have to come from the academic areas was regarded as unavoidable. This means, in approximate terms, a loss of one 50 to 60 posts if £1m is to be found" it says.

Conference threatened by Oxford college strikes

by David Jobbins

The civilized trappings of academic life at an Oxford college have been interrupted by an intrusion of 20th century union militancy.

A week-old strike by almost all manual workers at Pembroke College, Oxford, has paralysed the kitchens and dining rooms and forced several dons' wives to help out with the chores.

Forty-two out of the 50 manual workers have been actively in dispute with the college over its refusal to implement a rise to £1.38 an hour before August. The strikers, who National Union of Public Employees officials say are experienced at past delays, want the increase paid from June 1.

The college, confronted with its first strike since its foundation in 1624, is being picketed and union officials say several delivery vans have been turned back.

"Our members are not going back until the college is prepared to show some flexibility," said NUPE's Oxfordshire full time official Mr Alf Collier.

The dispute could hit some twentieth-century enterprise by the college. The Amalgamated Union of Engineering Workers has booked the college for a conference next week.

"We hope they will not cross our picket lines. In any event they cannot run a conference without kitchen and dining room facilities," said Mr Collier.

The strike erupted only days after the House of Commons gave a formal first reading to a Private Member's Bill requiring all colleges and universities to comply with the national agreements reached by the

Universities' Council for Non-Tenured Staff. Oxford and Cambridge colleges and a handful of universities have not joined the "sortition" on the grounds that could breach their halls of autonomy.

In the Commons, its sponsor, Reg Race, Labour MP for Greenwich, accused some Oxford colleges of paying poverty wages, said that Professor Hugh Clegg indicated he hoped they would into line with his recommendations for universities within consortium.

"There has been no satisfaction from the colleges", Mr Race said this week. "Not one of the colleges has been back to complain about what I said. It comes to paying national rates, they say, it is a question of autonomy."

In the Commons he referred to a letter from Professor Clegg in which the commission had under the impression that some of Oxford and Cambridge colleges were included in the reference.

"Had the commission been that the college employees were covered, we would have expected the hope that the colleges would apply the rates recommended by university employees," said letter to NUPE national office Rodney Bickerstaffe.

Mr Race said that at workers at a number of colleges received £26.80 before deductions for a 40-hour week, pared with the post Clegg on scale UCMS lowest-scale rate £24.75 a week.

"Beneath the dreaming spire of Oxford there is poverty and it brought about by the attitude some employers," he said.

GLC committee 'should control polys'

by Paul Flather

The eight London area polytechnics should be controlled separately by a special committee of the Greater London Council, irrespective of what happens to the Inner London Education Authority, a ministerial committee was told today.

The Association of Polytechnic Teachers, which has 3,500 members, says a new Greater London Education Committee for polytechnics would be an interim step towards the funding of all 30 polytechnics by a national body.

The new committee would iron

out differences that exist between the five polytechnics which receive 92 per cent of their funds from LEA and are limited liability companies, and three remaining polytechnics, Middlesex, North East London, and Kingston, which are maintained by education committees.

In its submission to the Young Committee reporting on the future of LEA, the association says the new committee should be insulated from politics, the "police-man" role adopted by some LEA appointees in polytechnic boards of governors, and the way party supporters are co-opted on to the authority.

The Young Committee never speci-

fically invited submissions, but in recent weeks it has received a number of statements arguing the pros and cons of LEA. This week the Bow Group sent in evidence arguing that changing needs and prior performance had made LEA obsolete.

"Its problems are aggravated by a constitution which gives every encouragement to greater spending," says the Tory pressure group. Meanwhile the TUC said this week the break-up of LEA would be an act of devastating vandalism leading to declining standards.

More than 70,000 letters have been pointed by a non-party Defend LEA campaign sponsored by church leaders and parents' groups.

Confusion at DOE error

An error by the Department of the Environment in its calculation of the cost of student grants resulted in a £50m exaggeration in the level of local education authority over-spending, it was disclosed this week.

Discovery of the mistake means that if meals and milk are excluded, local education authorities are over-spending by less than 2 per cent in the current year—well within the normal local government overspend.

But fears persisted this week that spending on higher education building projects will still be frozen following gloomy statements by two senior cabinet ministers.

In a speech to industrialists at Spalding, Lincolnshire, Sir Keith Joseph, Secretary of State for Industry, said: "It is essential to national recovery that the scale and function of the Civil Service should be reduced and that universities, polytechnics and local government should cease to grow".

"The past expenditure of these institutions has not only exceeded our capacity to pay for them but has taken up much of the scarce resources of all financial institutions."

Mr Michael Heseltine, Secretary of State for the Environment, had already given local authorities until August to trim spending said to be over 5 per cent in excess of this year's estimates. This would require additional cuts of £700m to take effect before next April.

Local authority officials see building programmes as the obvious target if the Government introduces the likely penalties for over-spending. Despite the tighter control of spending in education, the size of its budget would make its inclusion in a building intervention inevitable.

DES officials confirmed college principals' suspicions that polytechnics were enjoying more generous treatment in building allocations. But they have insisted that the revised regulations will put an end to the anomaly.

AUT leaders meet over pay

Leaders of Britain's 32,000 university lecturers are meeting in London next week to reassess their attitude to the Government's continuing failure to give its views on the 15 per cent pay deal already agreed with the employers.

With no signs that an early meeting of Committee B, when the Government's response will be known, was imminent, the Association of University Teachers is claiming its Parliamentary campaign is proving successful.

"We have had a very good campaign, with 150 letters from MPs saying they are taking the matter up," Mr Laurie Sapper, the union's general secretary, said.

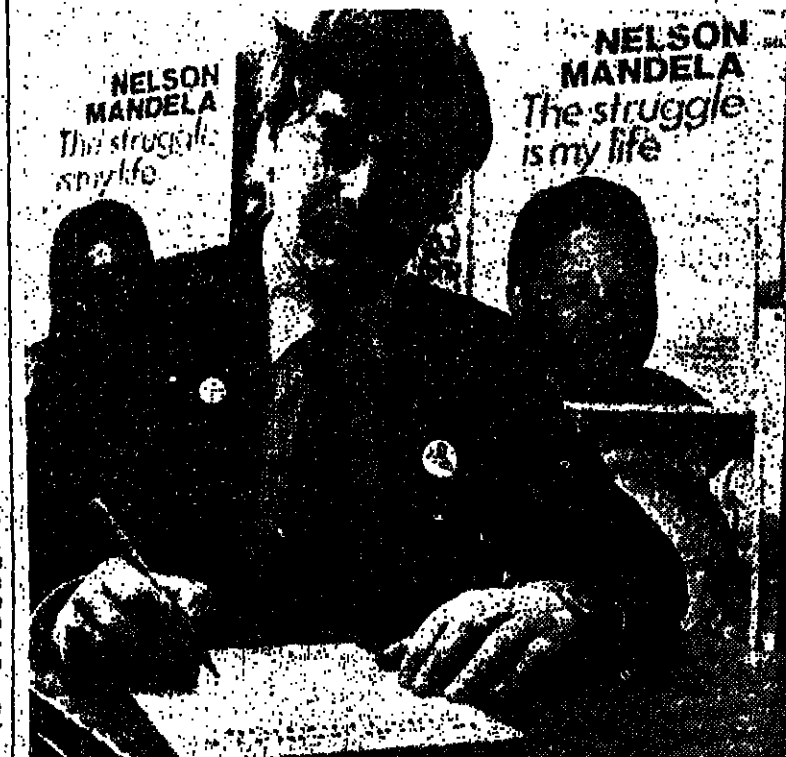
AUT leaders confess themselves perplexed at the reasons for the lengthening time lag between the meeting of Committee A, at which the agreement was made in mid-May, and the second stage of the negotiating process.

The issue was being raised in the House of Lords this week by Labour peers.

Members of the Educational Institutions for Scotland, Scotland's largest teaching union, have voted overwhelmingly for continued strike action.

Now all hope of breaking the 12-week deadlock over teachers pay lies with the management side of the Scottish Teachers' Salaries Committee, the negotiating body for further education and school teachers.

The EIS, which has a majority on the staff side of the STSC, outlined all its 48,700 members, giving them three options: referral to arbitration; refusal to arbitration but willingness to take strike action; necessary and continued action against the Scottish Teachers' Salaries Committee. The union's position is simply support whichever of the other two ways in the majority, and the executive.



The National Union of Students has pledged its support for an international campaign to free Nelson Mandela, the union's honorary president. Mr David Aaronovitch, president-elect of the NUS, is seen signing a declaration urging the South African authorities to release the black leader from Robben Island jail.

UGC staff cuts alarm unions

Staff cutbacks at the University Grants Committee have alarmed universities and union representatives who fear a serious loss of professional expertise.

The UGC has already lost one professor and two deputy secretaries, amounting to a quarter of their building staff, in cuts already implemented.

A major worry is a proposal, which no decision has been made, that the committee's chief architect and head of that department, will be replaced when he retires in two years' time.

What adds to the seriousness is that his second in command, in the superintending grade, retires next year. What is uncertain is what happens when he goes and whether the staff are brought in as replacements.

DES move on grants

Special grants to attract teachers into shortage subjects are one of the possibilities outlined in the Department of Education Science draft document to be discussed next month by Lady and the local authorities' unions.

This new move puts forward one package of all the possibilities, the current shortage mathematics, science and specialist teachers. Lady is known to be determined that should be no further delay in some positive action.

The discussion document down no guidelines but asks authorities to look again at age, redeployment, differential salaries and secondment. Any of which have already been applied to a limited extent.

On differential grants the document gives little detail. But it could be operated using offer students going into employment in subjects where an extra sum on top of the grant. This would then be repaid if the student did not complete a period of perhaps in the maintained sector.

NEXT WEEK

John Dentle on Evans. The CVCP on research. Polytechnic funding. In defence of polytechnics and sociology.

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